ORDER NO. MKE0501001C1
B3

Service Manual

Video Cassette Recorder

PV-V4525S
PV-V4535S-K
PV-455S-K

PbF
Solder Lead free

For servicing the R4-Mechanism Chassis for PV-Model, Please refer to the R4-Mechanism Chassis for PV-Model Service Manual (Order No. MKE0401000C1).

ITEM	SPECIFICATION
Power	Source: 120V AC±12V AC, 60 Hz±3Hz
	Consumption: Approx. 14W (Power on), Approx. 0.9W (Power off)
Video	Head: 4 rotary heads helical scanning system
	Input Level: VIDEO IN Jack (Phono type) 1.0Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43dB SLP: more than 41dB
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
	Input Level: AUDIO IN Jack (Phono type) -10dBv 47kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8dBv 1kΩ unbalanced
	Frequency Response: Normal Mono: SP: 100Hz-8kHz SLP: 100Hz-5kHz Hi-Fi Stereo: SP/SLP: 20Hz-20kHz
	Signal-to-Noise Ratio: Normal Mono: SP: more than 40dB Hi-Fi Stereo: SP/SLP: more than 60dB
	Wow and Flutter: Normal Mono: SP: Less than 0.18% WRMS SLP: Less than 0.35% WRMS

ITEM	SPECIFICATION
RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75Ω unbalanced
Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A throug l h (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal
Tape Speed	SP: 1-5/16 i.p.s (33.35mm/s) SLP: 7/16 i.p.s (11.12mm/s) Record/Playback Timer: 8 hr. with 160min. type tape used in SLP mode
Tape Format	Tape width 12.7mm (1/2inch) high density tape
Operating Condition	5˚C-40˚C (41˚F-104˚F) (Temperature) 10%-75% (Humidity)
Dimension (WxHxD)	360mm x 89mm x 226mm (14-3/16inch x 3-1/2inch x 8-7/8inch)
Weight	2.56kg (5.6lbs)
Solder	This model uses lead free solder (PbF).

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**

   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturerís specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.

3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 5.2 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

LEAKAGE CURRENT HOT CHECK
(See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.

2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 µF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.

3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.

4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

6. The potential at any point should not exceed 0.75 V RMS.

   A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

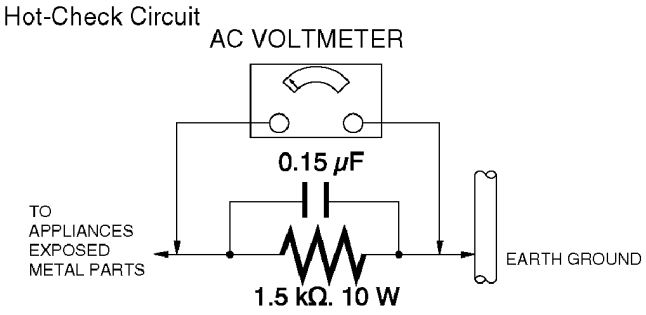


Figure 1

2 PREVENTION OF ELECTRO-STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION:

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

“NOTE toCATV system installer:

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.”

3 ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a printing on the PCB.

(Please refer to figures.)

Printed case

CAUTION:

- Pb free solder has a higher melting point than standard solder;

  Typically the melting point is 50°F - 70°F (30°C - 40°C) higher.

  Please use a soldering iron with temperature control and adjust it to 700°F ± 20°F (370°C ± 10°C).

  In case of using high temperature soldering iron, please be carefull not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF stamp or printing must be serviced with lead free solder.

  When soldering or unsoldering, completely remove all of the solder from the pins or solder area, and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn96.5 Ag3.0 Cu0.5.

4 SERVICE NOTES (PLEASE READ)

4.1. SELF-DIAGNOSIS INDICATION DISPLAY

This VCR has a self-diagnosis and display function.

1. Press CH DOWN Button on VCR for over 3 seconds in Power off condition, or keep pressing CH DOWN button on VCR in Shut off condition.

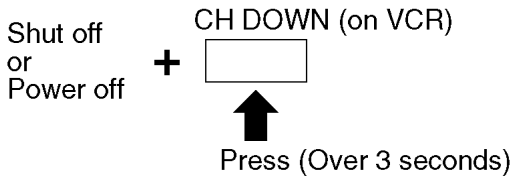


Fig. 1-1

2. Fault code (4-digit number) will be displayed in F.I.P. as shown.

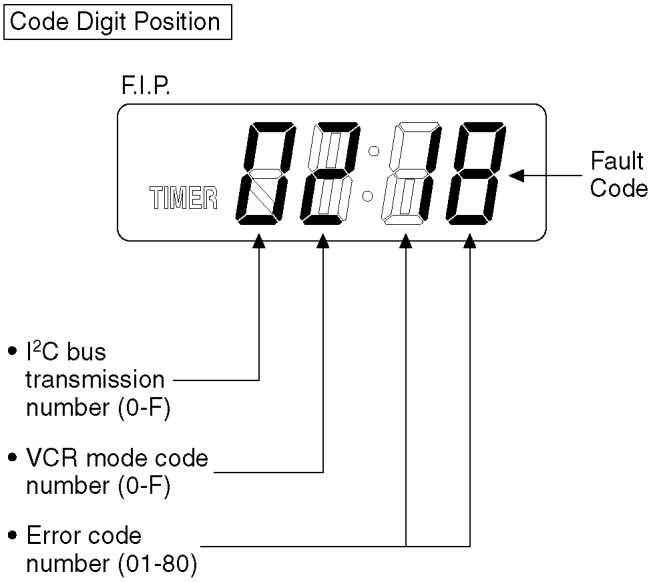


Fig. 1-2

4.1.1. Explanation of I²C bus transmission number

The condition of I²C bus transmission befor shut off is displayed.

Condition of I²C bus transmission (IC6001↔Tuner)	Condition of I²C bus transmission (IC6001↔IC6004)	Condition of I²C bus transmission (IC6001↔IC3001)	Condition of I²C bus transmission (IC6001↔IC4201)	Code No.
OK	OK	OK	OK	0
			NG	1
		NG	OK	2
			NG	3
	NG	OK	OK	4
			NG	5
		NG	OK	6
			NG	7
NG	OK	OK	OK	8
			NG	9
		NG	OK	A
			NG	b
	NG	OK	OK	C
			NG	d
		NG	OK	E
			NG	F

Fig. 1-3

4.1.2. Explanation of VCR mode code number

The condition of VCR Mode before shut off is displayed.

VCR Mode	Code No.	VCR Mode	Code No.
STOP	0	PLAY	8
EJECT	1	STILL	9
REW	2	REC	A
FF	3	REC PAUSE	b
REV	4	A.DUBBING	C
CUE	5	A. DUB PAUSE	d
SLOW	6	INSERT	E
POWER OFF	7	INSERT PAUSE	F

Fig. 1-4

4.1.3. Explanation of Error code number

The detecting condition and movement of mechanism is displayed.

Code No.	Error condition	Remedy/Check
01	CYL PFG pulse can not be detected when the Cylinder starts.	Please check the Cylinder motor, Cylinder drive circuit and CYL PFG signal circuit.
02	CAP FG pulse can not be detected during the Mechanism Initial operation (Tape rewinding by the S-Reel) at DOWN position.	Please check the Capstan motor, Capstan drive circuit and CAP FG signal circuit.
03	Loading Lock during Loading operation at DOWN position.	Please check the Mechanism, Loading Motor, Drive circuit, Drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
04	Loading Lock during Unloading operation at DOWN position.	Please check the Mechanism, Loading Motor, Loading Motor drive circuit, Loading motor drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
05	S-reel pulse can not be detected during Unloading operation.	Please check the Mechanism S-reel system, S-reel sensor, S-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
06	Loading (cassette) Lock during Cassette Up operation.	Please check the Mechanism, Loading motor, Loading motor drive circuit, Loading motor drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
11	Head clog detection.	Clean the Cylinder Head.
14	The position signal from Mode Select SW can not be detected.	Check Mode Select SW contact.
15	CAP FG pulse can not be detected during Cassette in operation.	Please check the Capstan motor, Capstan motor drive circuit and the CAP FG signal circuit.
16	Cylinder Lock	Please check the Cylinder motor, Cylinder motor drive circuit and the CYL HSW signal circuit.
17	S-reel Lock.	Please check Mechanism S-reel system, S-reel sensor, S-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
18	T-reel Lock.	Please check Mechanism T-reel system, T-reel sensor, T-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
80	Eject operation due to error condition.	Please check the Cassette tape, S-photo sensor, S-reel and Capstan system.

Fig. 1-5

4.1.3.1. Reason of Ejection

When an error code is 80, the reason of ejection is displayed on the Light Emitting Diode (LED) display of “TIMER”.

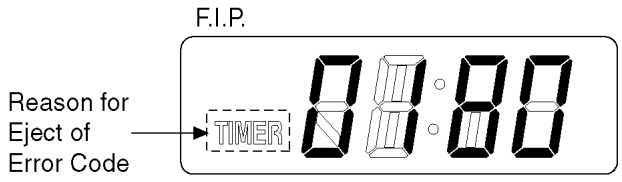


Fig. 1-6

LED Display	Reason of Eject of Error Condition
No Light up	Cassette tape is off from S-Post at Down position.
TIMER lighting	Capstan motor can not rotate.
TIMER flashing (1Hz)	Mechanism Lock during Loading operation at DOWN position.
TIMER flashing (2Hz)	Both ends of tape is detected at DOWN position.

Fig. 1-7

4.1.4. Memory and Clear of Fault Code

- Error code is memorized on EEPROM (IC6004) (latest Error code only).
- Error code is cleared by power on operation after a self-diagnostic display or Memory all clear.

4.2. USAGE SCREEN MODE

Function displayed on the TV monitor:

- the total elapsed “Cylinder rotation” time (in hours)

1. With power turned on and no cassette, press CH DOWN button on VCR and 7 key on remote controller together.

   (The USAGE SCREEN will be displayed on the TV Monitor.)

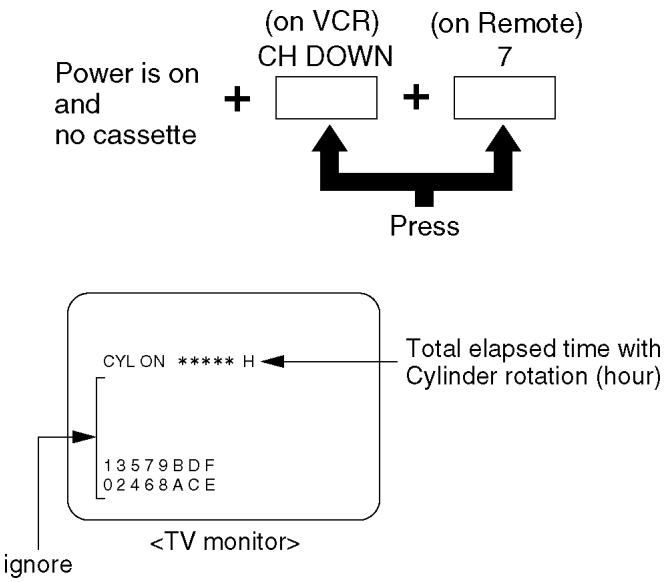


Fig. 2-1

Note:

1. After replacing the Cylinder Unit, press COUNTER RESET button on remote controller in this mode. Total elapsed “Cylinder rotation” time (in hours) will be cleared to 0.
2. To release from Usage Screen Mode, press any operation button on remote controller or insert a cassette tape in this mode. The VCR will return to normal operation mode.

4.3. EEPROM IC (IC6004), MAIN C.B.A. REPLACEMENT NOTE

After replacing EEPROM IC (IC6004) or Main C.B.A., be sure to perform the "PG SHIFTER ADJUSTMENT".

4.4. SERVICE POSITION

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. Use extreme care to prevent accidental shock when servicing.

NOTE:

When carring out loading of the cassette tape, if light is strong, a tape may not carry out loading.

Please shade a Mechanism Unit top or weaken lighting.

4.4.1. Service Position (1)

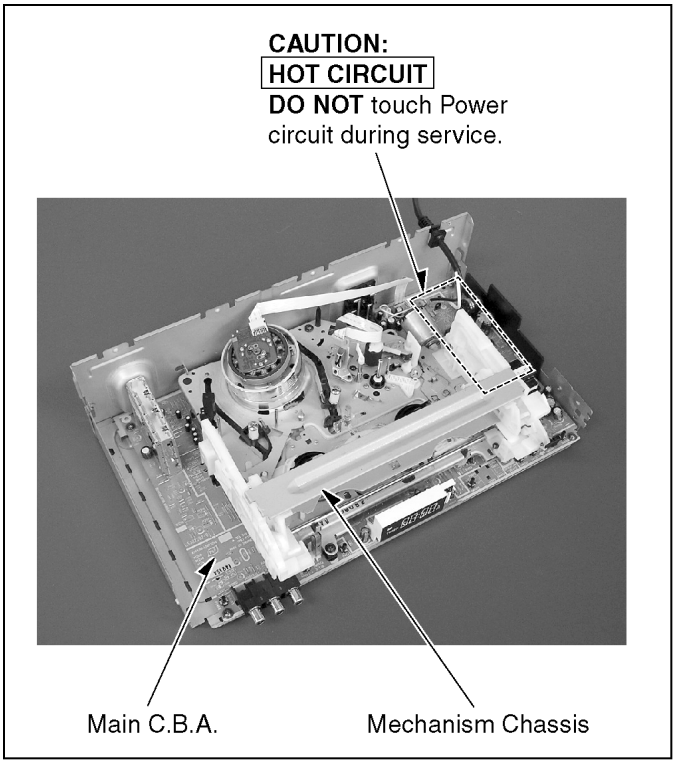


Fig. 4-1

4.4.2. Service Position (2)

Turn on the power and insert the Cassette tape.

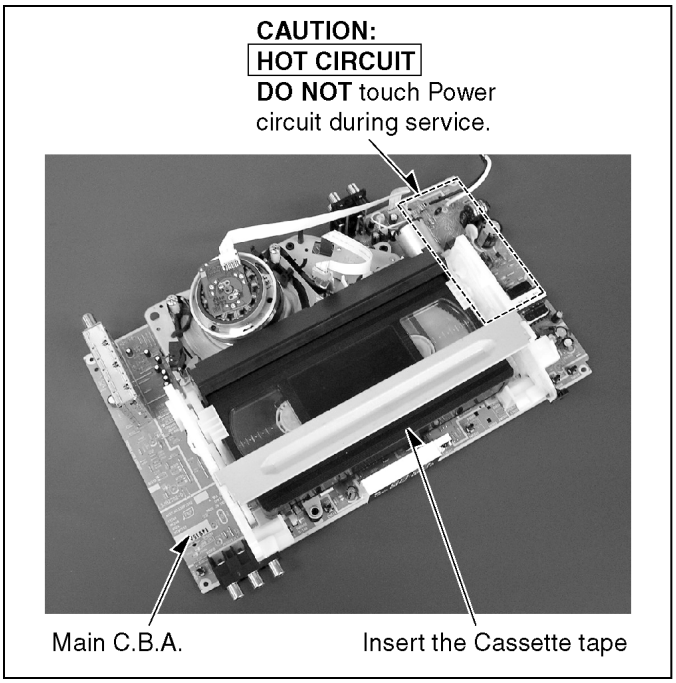


Fig. 4-2

After disconnecting the AC cord, turn over the Main C.B.A. and Mechanism Chassis together.

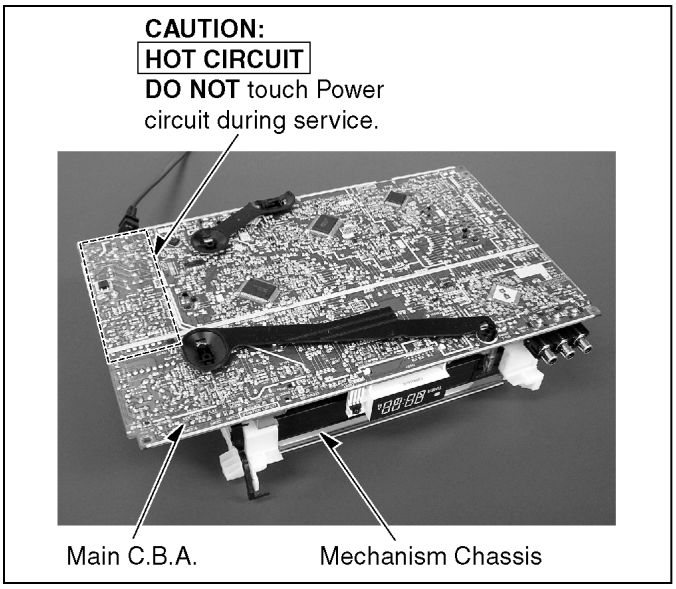


Fig. 4-3

4.5. HOT CIRCUIT

Primary circuit exists on the Main C.B.A.

This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

4.6. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock can be inhibited. In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass´y, it can be confirmed without a cassette.

To enter Service Mode:

Press and hold FF and CH UP buttons on the VCR together over 5 seconds in power off condition.The unit goes into Service Mode.

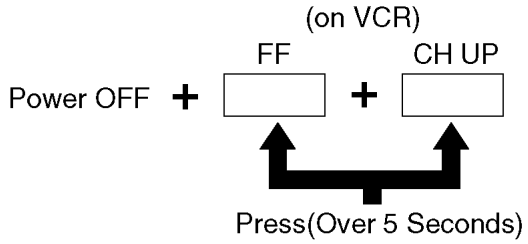


Fig. 6-1

To release from this mode, disconnect AC Plug.

4.7. MECHA MANUAL MODE

In shut off condition or in Service Mode, press the CH UP button on the unit and CH UP key on the remote together without a cassette.

In this mode, Loading or Unloading operation can be confirmed by pressing the FF or REW key on the remote.

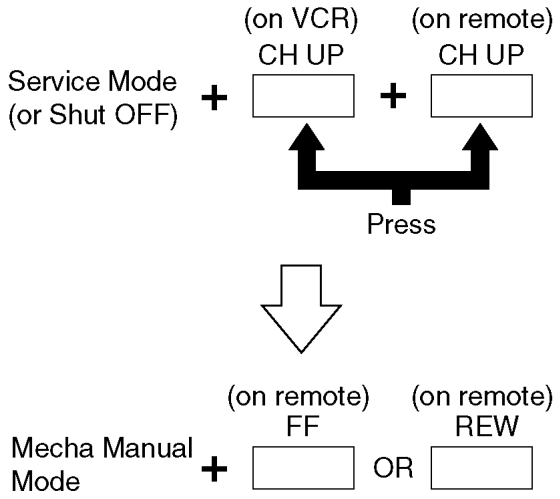


Fig. 7-1

To release from this mode, disconnect AC Plug.

Note:

When Loading with no cassette tape, push the portion (A) on Cassette Holder Unit so that the Sefety Lever clear the 2 Tabs as show in below.

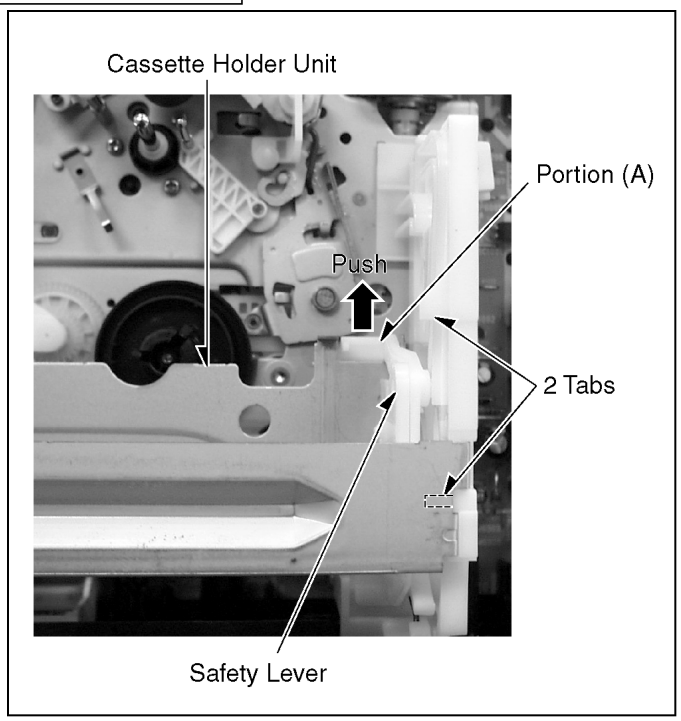


Fig. 7-2

4.8. TRACKING CENTER MODE (TRACKING FIX AT CENTER)

Insert the Cassette tape. Set the unit into Service Mode. Press CH UP button and CH DOWN button on VCR together in Play back mode. “TRACKING CENTER” will be displayed on the TV monitor.

In this mode, the tracking is fixed at center. (Auto tracking and manual tracking functions are not operational.)

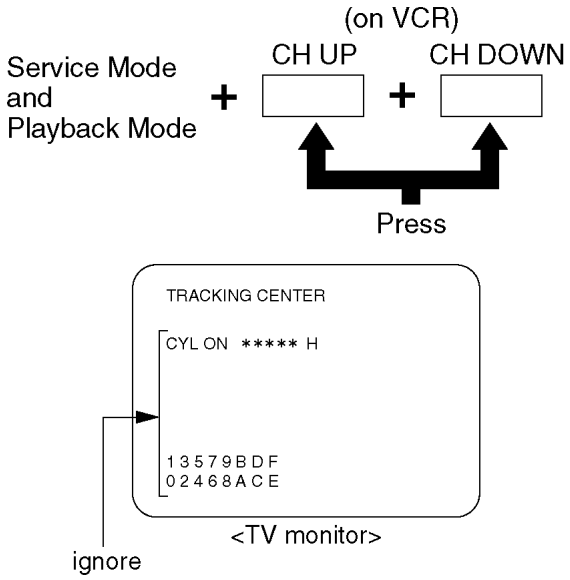


Fig. 8-1

To release from this mode, press CH UP button and CH DOWN button on VCR together again.

4.9. HOW TO RESET ALL VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, **no** cassette inserted), hold down the PLAY and CH DOWN buttons on the VCR together for more than 5 seconds.

Power will shut off.

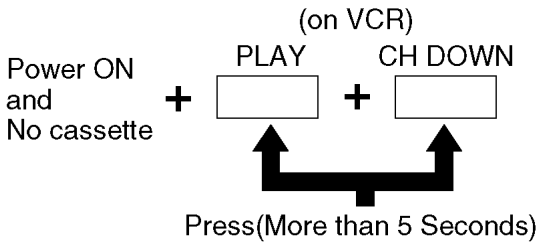


Fig. 9-1

4.10. F.F.C. CONNECTION NOTE

Be careful with the direction of F.F.C.s to connectors as shown.

Note:

1. Insert the F.F.C. so that it is parallel to the connector.
2. After inserting the F.F.C., check that the F.F.C. does not incline.

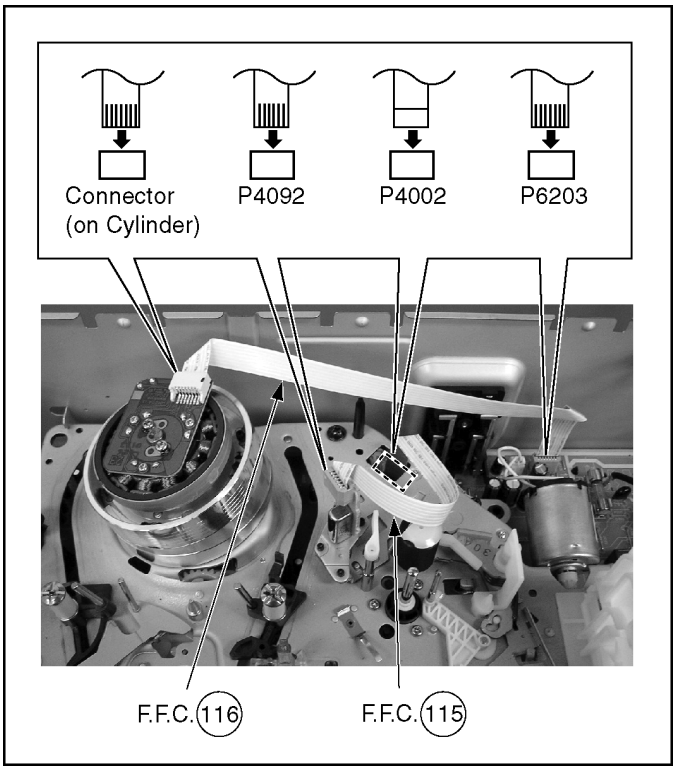


Fig. 10-1

4.11. HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

4.12. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

4.13. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.

Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

4.14. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the “ELECTROSTATICALLY SENSITIVE (ES) DEVICES” section of this service manual.

4.15. MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C
Not Used	PT

Note:

Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram Notes, for mark “PT.”

5 DISASSEMBLY/ASSEMBLY PROCEDURES

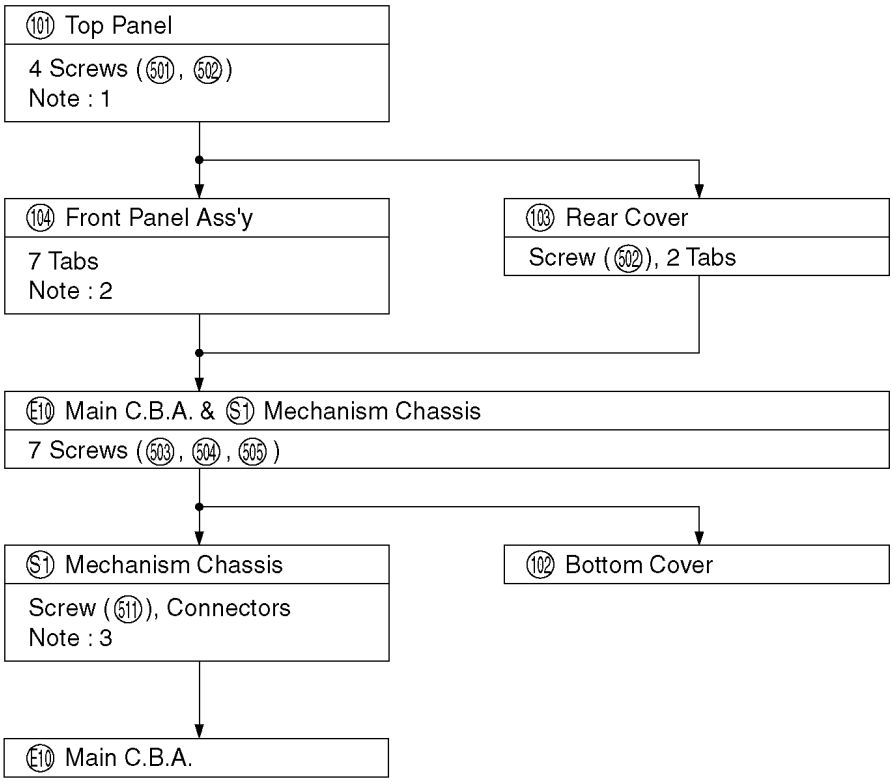
5.1. CABINET SECTION

5.1.1. Disassembly Flowchart

Perform disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

Disconnect AC plug before disassembly or assembly.



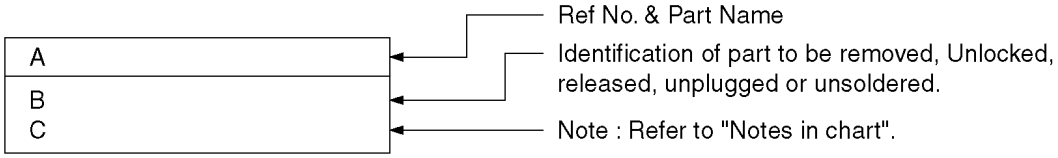

A
B
C
Ref No. & Part Name
Identification of part to be removed, Unlocked, released, unplugged or unsoldered.
Note : Refer to "Notes in chart".

Fig. D1

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

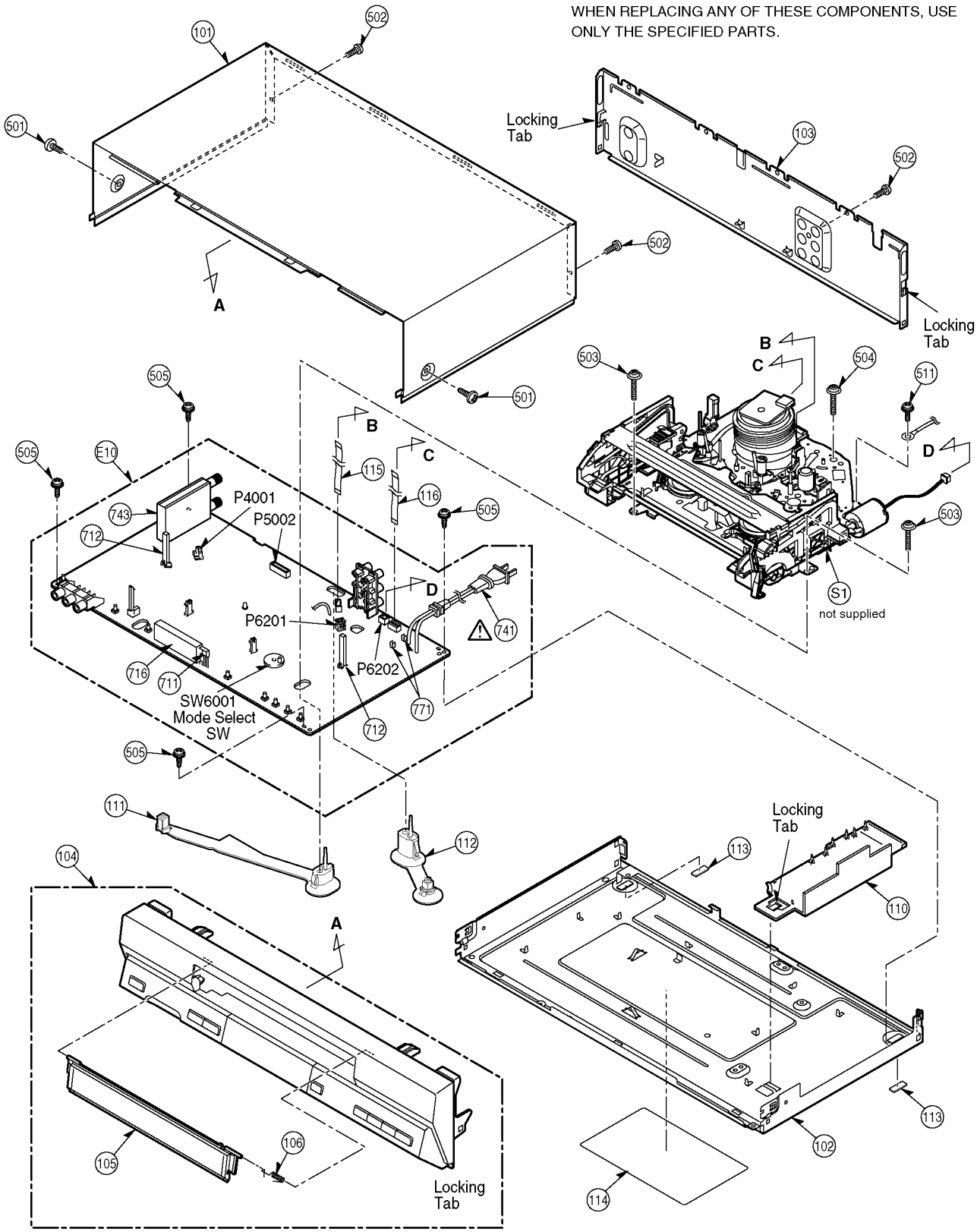


Fig. D2

5.1.1.1. Notes in chart

1. **Installation of Top Panel**

   Install the Top Panel front portion at a downward angle so that the tab on the Front Panel Ass'y fits into the hole in the Top Panel.

   Then, lower the rear portion into place and tighten 4 Screws (501, 502).

2. **Installation of Front Panel Ass'y**

   CAUTION:

   Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener Lever of Cassette Up Ass'y set incorrectly.

   a. When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.

   b. Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

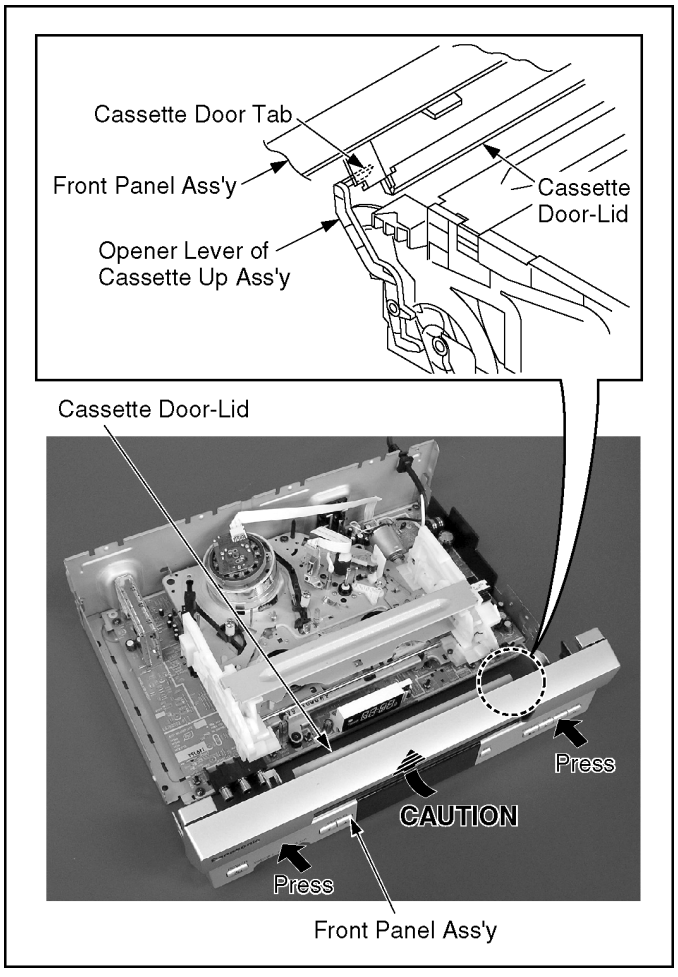


Fig. D3

3. **Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.**

   a. Make sure the Mode Select SW. on the Main C.B.A. is in **EJECT** position. If not, rotate the Mode Select SW. until the alignment projection is in the **EJECT** Position.

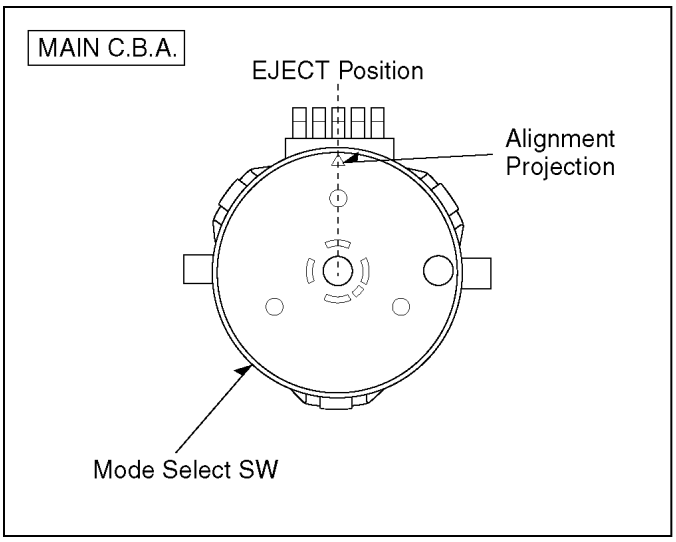


Fig. D4

   b. Make sure the phase hole of the Main Cam Gear on the bottom side of Mechanism Unit is in **EJECT** position.

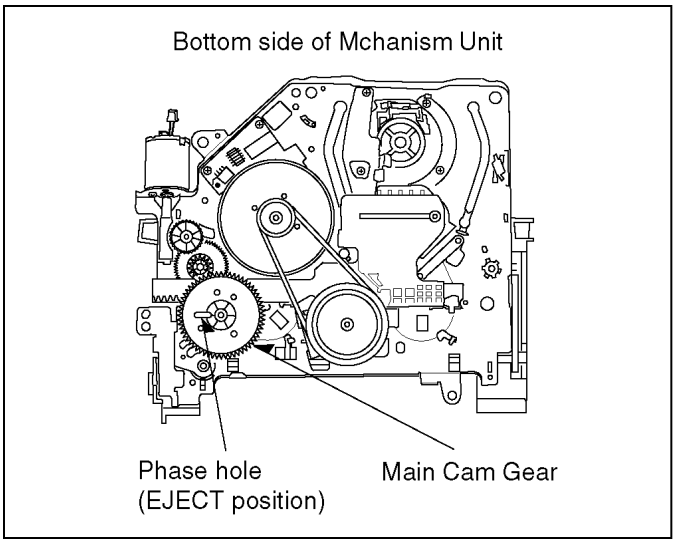


Fig. D5

   c. Install the Mechanism Chassis straight onto the Main C.B.A. so that the Photo Transistor Unit (712) clears the hole in the Mechanism Chassis and that 3 Connectors (P5002, P4001, P6201) are aligned and seated securely.

5.2. MECHANISM SECTION

Refer to the Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

6 ADJUSTMENT PROCEDURES

6.1. MECHANICAL ADJUSTMENT

Refer to the Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

6.2. ELECTRICAL ADJUSTMENT

6.2.1. TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope
   Voltage Range: 0.001 V to 50 V/Div.
   Frequency Range: DC to 50 MHz
   Probes: 10:1, 1:1
2. Isolation Transformer (Variable)
3. VHS Alignment Tape (VFMS0003H6)
4. TV monitor

6.2.2. HOW TO READ THE ADJUSTMENT PROCEDURES

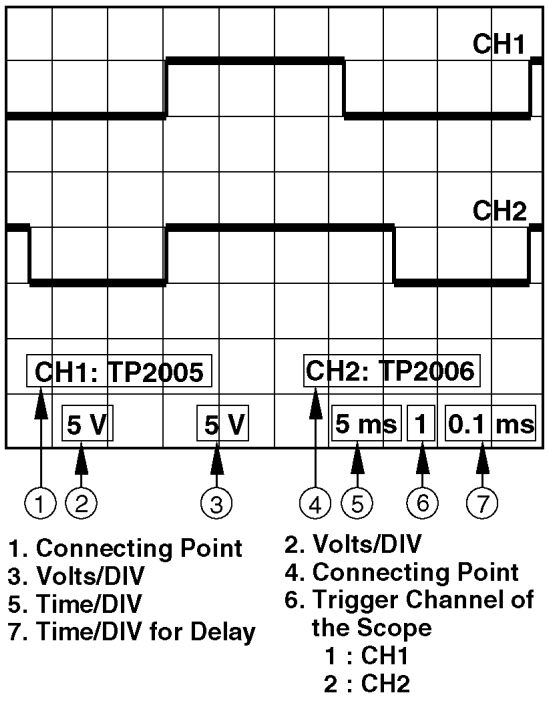


Fig. E1

6.2.3. EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I^2C Bus concept.

The PG SHIFTER ADJUSTMENT is adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).

6.2.4. PG SHIFTER ADJUSTMENT

Purpose:	Determine the Video Head Switching Point during Playback.
Symptom of Misadjustment:	May cause Head Switching Noise and/or Vertical Jitter.
Test Point :	**TP3001 (Main C.B.A.), TP6205 (Main C.B.A.)**
Specification:	**T = 6 H ± 0.5 H (0.38 ms ± 0.03 ms)**
Mode :	SP Playback
Equipment :	Oscilloscope, VHS Alignment Tape (VFMS0003H6), TV monitor

1. Insert the VHS Alignment Tape. Enter service mode by pressing and holding FF and CH UP buttons on VCR together for more than 5 seconds.
2. Play back SP mode. Then, press 100 button on the remote to enter EVR PG SHIFTER ADJUSTMENT mode. PG ADJUSTMENT screen will appear on the TV Monitor.

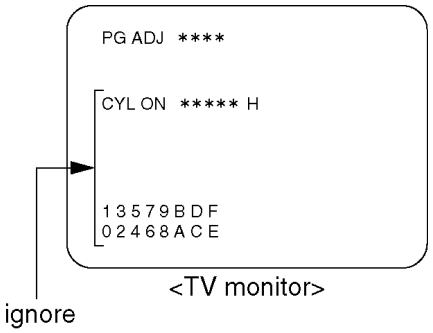


Fig. E2

3. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Used TP6205 as a trigger
4. Adjust value so that the trailing edge of the head switching pulse is placed 6 H ± 0.5 H (0.38 ms ± 0.03 ms) before the start of the vertical sync pulse by pressing CH UP and CH DOWN buttons on the remote.

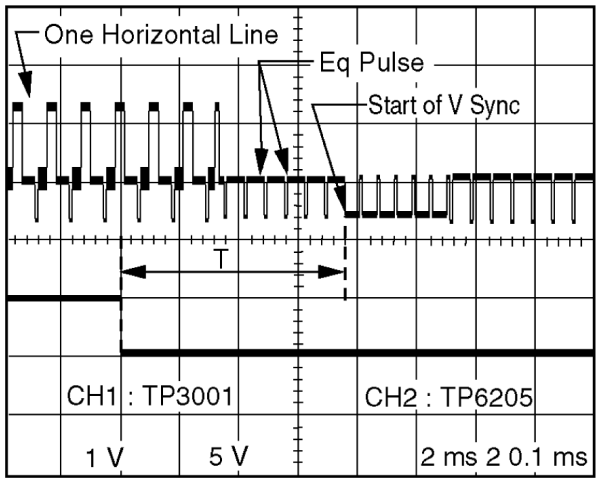


Fig. E3

5. After adjustment is completed, press REC button on the remote. Then " COMP " will appear on the TV monitor and adjusted value will be written to Memory IC (IC6004).

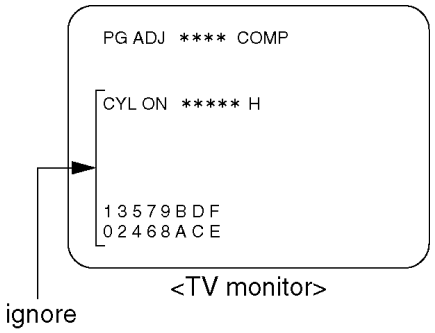
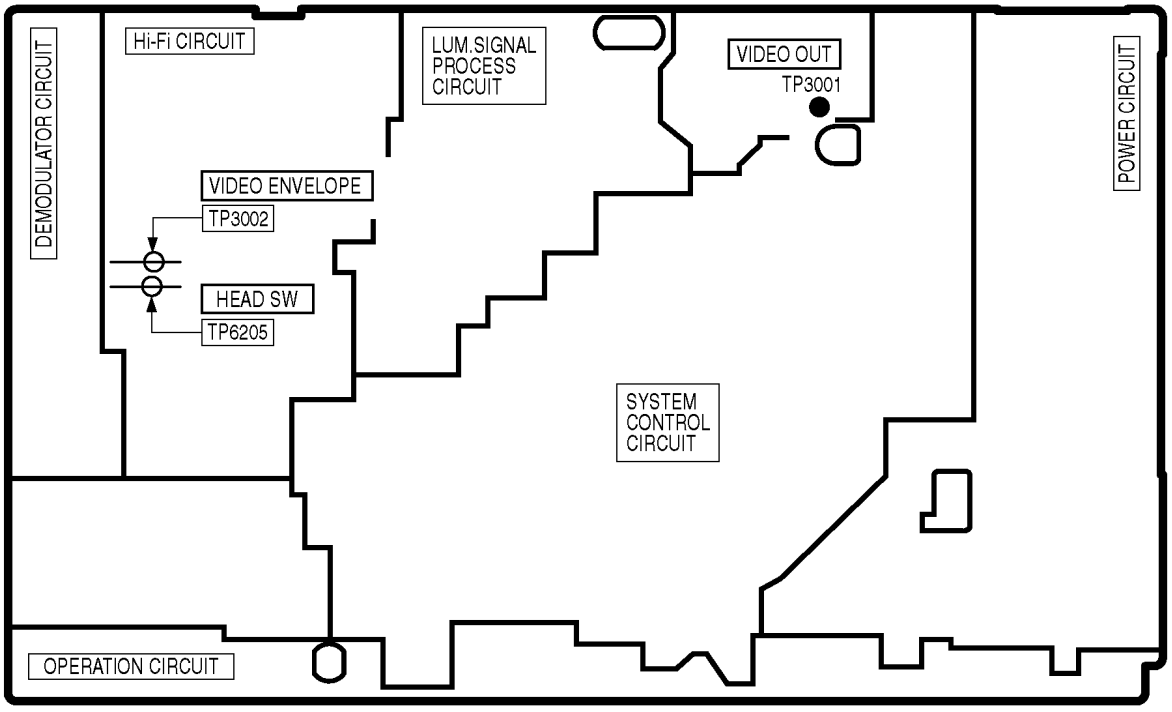


Fig.E4

6. Press STOP button on the remote to release from EVR PG SHIFTER ADJUSTMENT MODE.

6.3. TEST POINTS AND CONTROL LOCATION

MAIN C.B.A. (Component Side)



Test point information

□→ : Test point with a jumper wire across a hole in C.B.A.

● : Test point with a component lead on the foil side.

7 SCHEMATIC DIAGRAMS

7.1. SCHEMATIC DIAGRAM & CIRCUIT BOARD LAYOUT NOTES

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ▭→: Test point with a jumper wire across a hole in P.C.B.
   ○ : Test point with no test pin.
   ● :Test point with a component lead on the foil side.

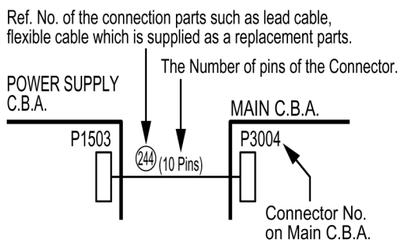
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

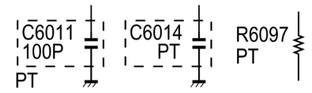
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
POWER SUPPLY C.B.A.
MAIN C.B.A.
P1503
(24) (10 Pins)
P3004
Connector No. on Main C.B.A.

3. Parts marked "PT" are not used in any models included in this service model.

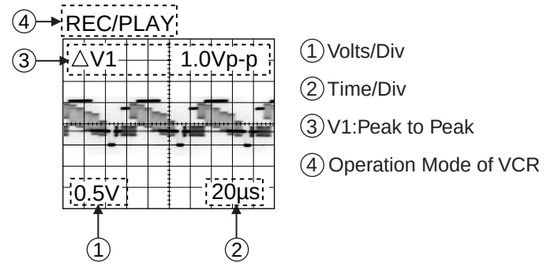
Example:



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform



Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---: Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

Model No. Identification Mark

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C
Not Used	PT

Note : Refer to item 3 of Schematic Diagram Notes for mark "PT".

7.2. MAIN SCHEMATIC DIAGRAMS

MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM

NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT

REC VIDEO SIGNAL
PB VIDEO SIGNAL
CAPSTAN SERVO
CYLINDER SERVO

MODE SELECT SWITCH

PIN NO.OF IC6001 / MODE	SW1 (33)	SW2 (32)	SW3 (31)	SW4 (30)
EJECT	L	H	H	H
DOWN	L	H	L	L
R-REW	H	H	L	L
LOAD	L	L	H	L
REV	H	L	H	L
PLAY	L	H	H	L
POWER OFF	H	H	H	L
STOP R	L	L	L	H
STOP F	H	L	L	H
FF/REW	L	L	H	H
FF2	L	H	H	H
INTERMEDIATE POSITIONS BEWEEN EACH POSITIONS	H	H	H	H

LINK TO I/O CHART

LINK TO VOLTAGE CHART

LSJB2202
MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

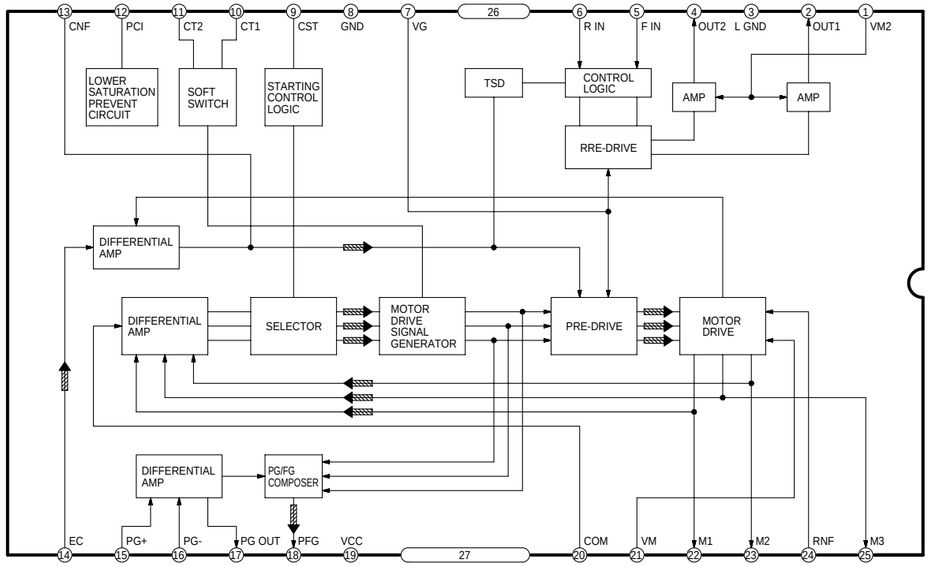
I/O CHART OF IC6001

Pin No.	Signal Name	I/O	Description
1	KEY 1	I	Input terminal for the KEY OPERATION DATA 1.
2	CODE 1	I	Input terminal for the Model setting 1.
3	CODE 2	I	Input terminal for the Model setting 2.
4	T.S.CUVRE	I	Input terminal for S-CURVE of Tuner AFC at channel selecting.
5	KEY 2	I	Input terminal for the KEY OPERATION DATA 2.
6	NC	-	Not used.
7	S PHOTO	I	Input terminal for the Tape End sensor detection.
8	T PHOTO	I	Input terminal for the Tape Beginning sensor detection.
9	TRACKING ENV.	I	Input terminal for the VIDEO ENVELOPE signal.
10	MTS MODE	I	Input terminal for the MTS MODE detection.
11	CURRENT LIMIT	O	Control terminal for the CAPSTAN CURRENT LIMIT.
12	NC	-	Not used.
13	ART. V/H/N	O	Output terminal for the ARTIFICIAL V-SYNC.
14	REMOCON	I	Input terminal for the REMOTE CONTROLLER OPERATION DATA.
15	NC	-	Not used.
16	NC	-	Not used.
17	NC	-	Not used.
18	VIDEO H.SW	O	Output terminal for the VIDEO HEAD SWITCHING signal.
19	AUDIO H.SW	O	Output terminal for the HiFi AUDIO HEAD SWITCHING signal.
20	NA PB SW ON L	O	Recording control signal for the Linear Audio.
21	NC	-	Not used.
22	DEFEAT H	O	Output terminal for muting at channel selecting.
23	HIFI PB H	I	HIFI PLAYBACK: "High" NORMAL PLAYBACK: "Low"
24	NC	-	Not used.
25	NC	-	Not used.
26	V D REC H	O	VIDEO DELAY REC: "High"
27	NO S TAB L	I	Input terminal for the SAFETY TAB detection.
28	A MUTE H	O	AUDIO MUTING: "High"
29	3CH Hiz/4CH L	O	CH3: "Hiz" CH4: "Low"
30	POS. SW4	I	Input terminal for the MODE SELECT SW POSITION 4.
31	POS. SW3	I	Input terminal for the MODE SELECT SW POSITION 3.
32	POS. SW2	I	Input terminal for the MODE SELECT SW POSITION 2.
33	POS. SW1	I	Input terminal for the MODE SELECT SW POSITION 1.
34	RESET L	I	Input terminal for the RESET: "Low".
35	NC	-	Not used.
36	NC	-	Not used.
37	+5V (D)	-	VCC (5V) for Digital port.
38	12MHz IN	I	Main clock (12MHz) OSC input terminal.
39	12MHz OUT	O	Main clock (12MHz) OSC output terminal.
40	GND (OSC)	-	Digital GND for OSC circuit.
41	NC	-	Not used.
42	NC	-	Not used.
43	NC	-	Not used.
44	LC OSC IN	I	Input terminal of the LC Oscillation (For OSD dot clock).
45	LC OSC OUT	O	Output terminal of the LC Oscillation (For OSD dot clock).
46	NUB (GND)	-	Connected to the GND.
47	4FSC LPF	I	OSC Filter connection terminal for Internal sync generator.
48	FSC IN	I	Sub carrier (FSC) input terminal for sync generator.
49	GND (OSD)	-	GND terminal for OSD circuit.
50	CV IN	I	Input terminal for COMPOSITE VIDEO signal.

Pin No.	Signal Name	I/O	Description
51	BW H/COLOR L	I	Not used.
52	CV OUT	O	Output terminal for COMPOSITE VIDEO signal.
53	5V (OSD)	-	Power supply terminal for OSD.
54	HLF	I	LPF connection terminal for slicer.
55	V HOLD	I	Capacitor connection terminal of the Reference voltage generator circuit for the slicer.
56	CV IN (EDS)	I	COMPOSITE VIDEO signal input terminal for the slicer.
57	NUA (GND)	-	Connected to the GND.
58	FIP OFF L	O	FIP ON: "High" FIP OFF: "Low"
59	NC	-	Not used.
60	NC	-	Not used.
61	VCR H/TV L	O	TV: "Low" VCR: "High"
62	NC	-	Not used.
63	NC	-	Not used.
64	NC	-	Not used.
65	UNLOADING H	O	LOADING MOTOR control terminal.
66	PANE CS	O	FIP SERIAL CHIP SELECTOR.
67	LOADING H	O	LOADING MOTOR control terminal.
68	MASTER DATA 1	I/O	SERIAL DATA output for FIP.
69	NC	-	Not used.
70	SCK 1	O	SERIAL CLOCK output for FIP.
71	IIC CLK	O	Serial communication terminal (IIC CLOCK) for VIDEO IC/ FM AUDIO IC/EEPROM/TUNER.
72	IIC DATA	I/O	Serial communication terminal (IIC DATA) for VIDEO IC/ FM AUDIO IC/EEPROM/TUNER.
73	ROM CORE	O	ROM Correction confirmation mode.
74	CAP R/F	O	The rotation direction control terminal of the CAPSTAN driver.
75	NC	-	Not used.
76	CAP ET	O	CAPSTAN MOTOR control terminal.
77	CYL ET	O	CYLINDER MOTOR control terminal.
78	P FAIL L	I	Input terminal for the POWER FAILAR detection.
79	S REEL PULSE	I	Input terminal for the SUPPLY REEL PULSE.
80	T REEL PULSE	I	Input terminal for the TAKE-UP REEL PULSE.
81	SP L	O	REC/PLAY MODE: SP = "Low"
82	EX FF/REW L	O	Control signal filter select terminal in FF/REW mode.
83	P ON H	O	ON/OFF control terminal for the VCR POWER.
84	AVR L	O	Simplified AI PLAYBACK ON/OFF control.
85	SQPB IN H	I	Input terminal for the S-VHS PLAYBACK detection.
86	FG AMP OUT	O	Output terminal for the CAPSTAN FG AMP signal.
87	FG AMP IN	I	Input terminal for the CAPSTAN FG AMP signal.
88	GND (A)	-	GND for Analogue circuit.
89	NC	-	Not used.
90	CYL PFG	I	Input terminal for the CYLINDER PG/FG.
91	OREF	O	1/2 VDD reference voltage output terminal for the Analogue AMP.
92	IREF	I	1/2 VDD reference voltage input terminal for the Analogue AMP.
93	S CAS H	-	Low fix.
94	CTL HAED (-)	I/O	terminal for the CONTROL HEAD (-).
95	CTL HAED (+)	I/O	terminal for the CONTROL HEAD (+).
96	CTL AMP REF	I	Capacitor connection terminal for reference of the CONTROL AMP.
97	PB CTL OUT	O	Output terminal for the CONTROL AMP.
98	5V (A)	-	Power supply terminal for Analogue AMP.
99	5V (AD)	-	Reference power supply terminal.
100	NC	-	Not used.

IC6201
CYLINDER/LOADING MOTOR DRIVE IC-DETAIL BLOCK DIAGRAM

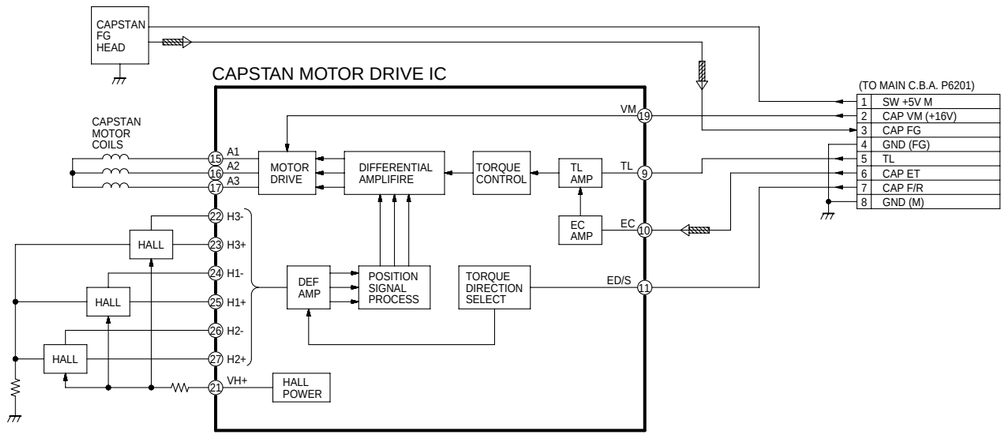
◀ CYLINDER SERVO



CAPSTAN MOTOR ASS'Y BLOCK DIAGRAM

NOTE:CAPSTAN MOTOR ASS'Y IS SUPPLIED AS A UNIT ONLY.

◁ CAPSTAN SERVO



MAIN II (VIDEO SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM

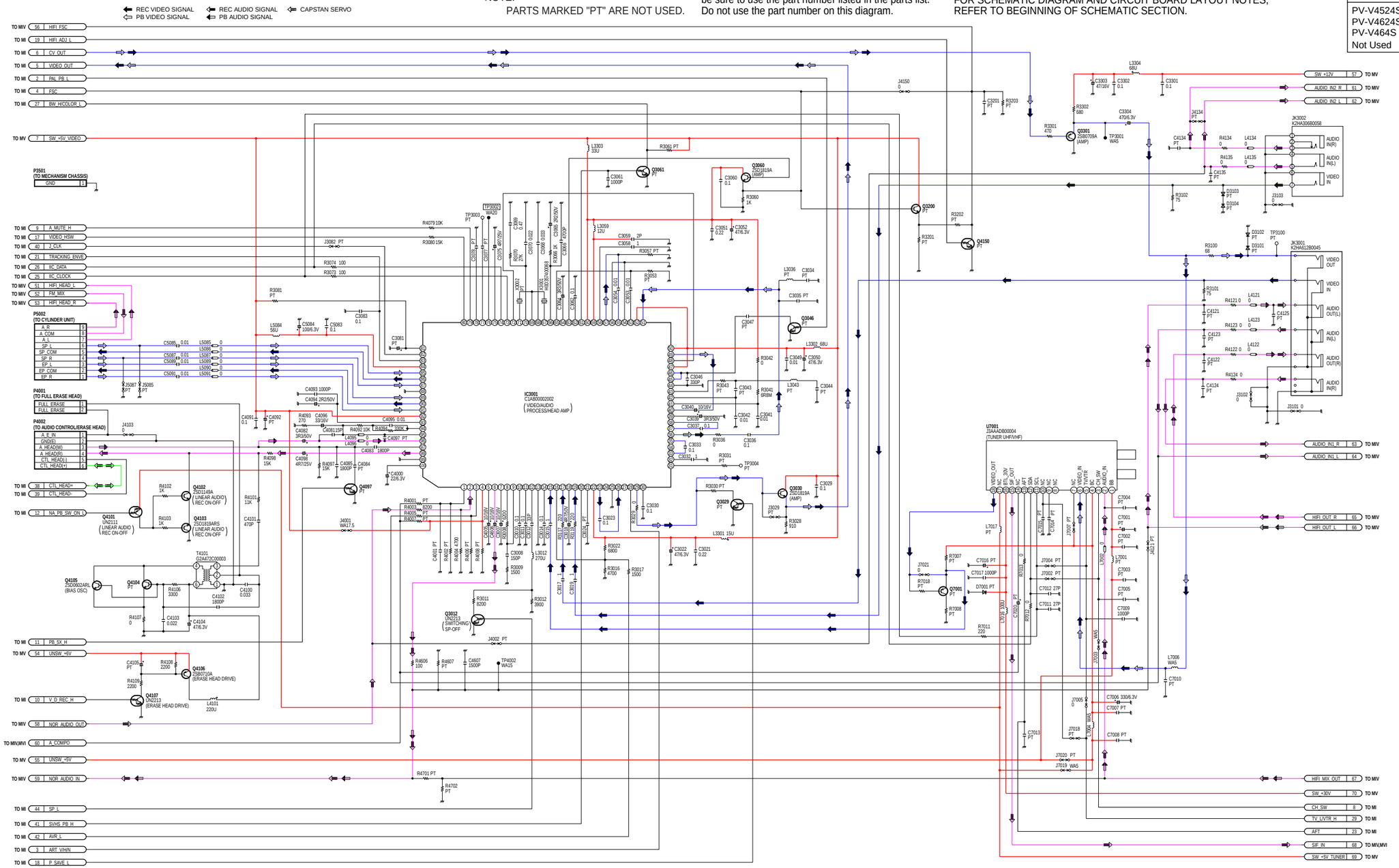
NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT

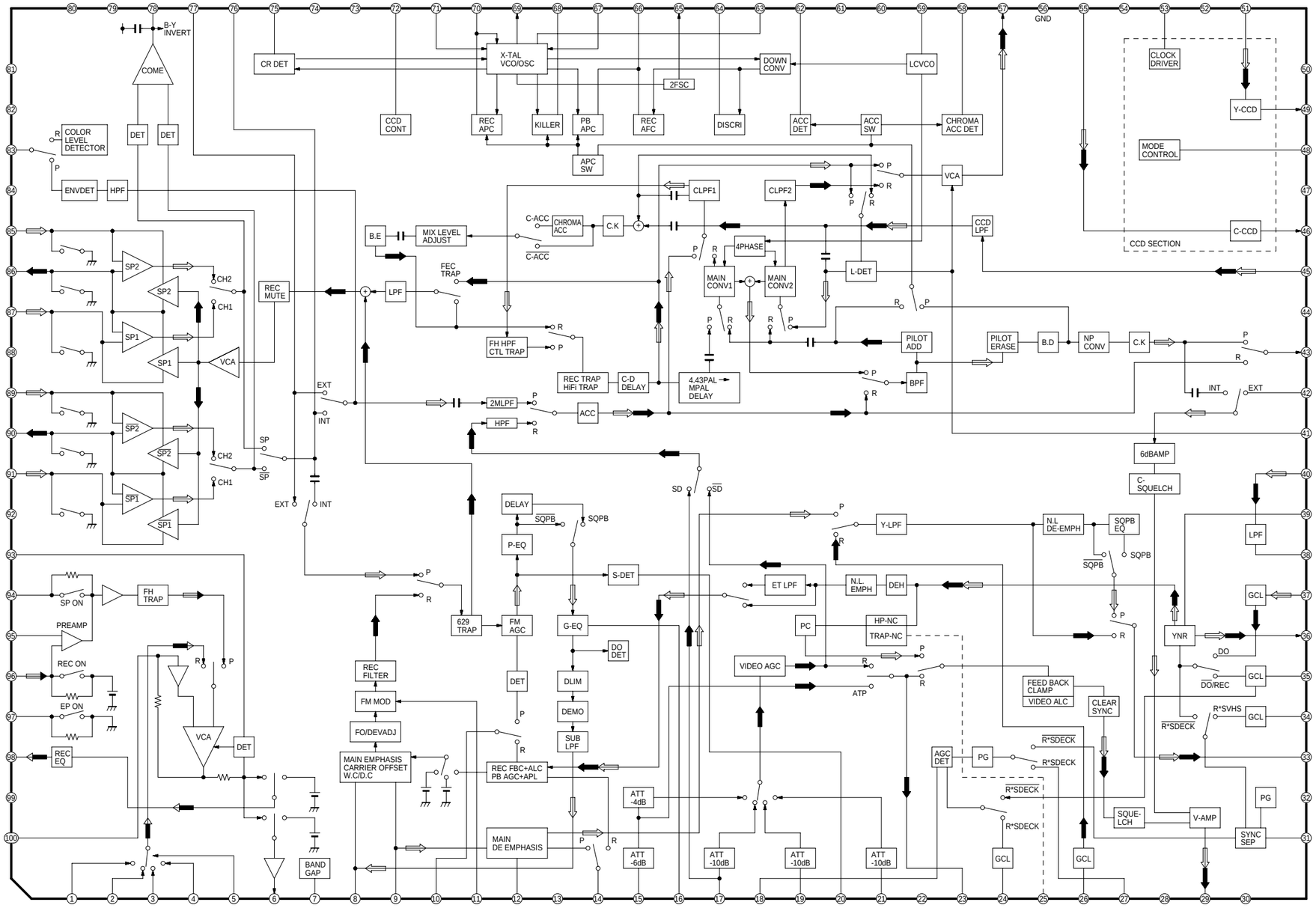


LINK TO VOLTAGE CHART

LSJB2202
MAIN II (VIDEO SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

IC3001 VIDEO/AUDIO SIGNAL PROCESS/HEAD AMP IC-DETAIL BLOCK DIAGRAM

REC VIDEO SIGNAL　PB VIDEO SIGNAL　REC AUDIO SIGNAL　PB AUDIO SIGNAL



IC3001 DETAIL BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

MAIN III (OPERATION) SCHEMATIC DIAGRAM

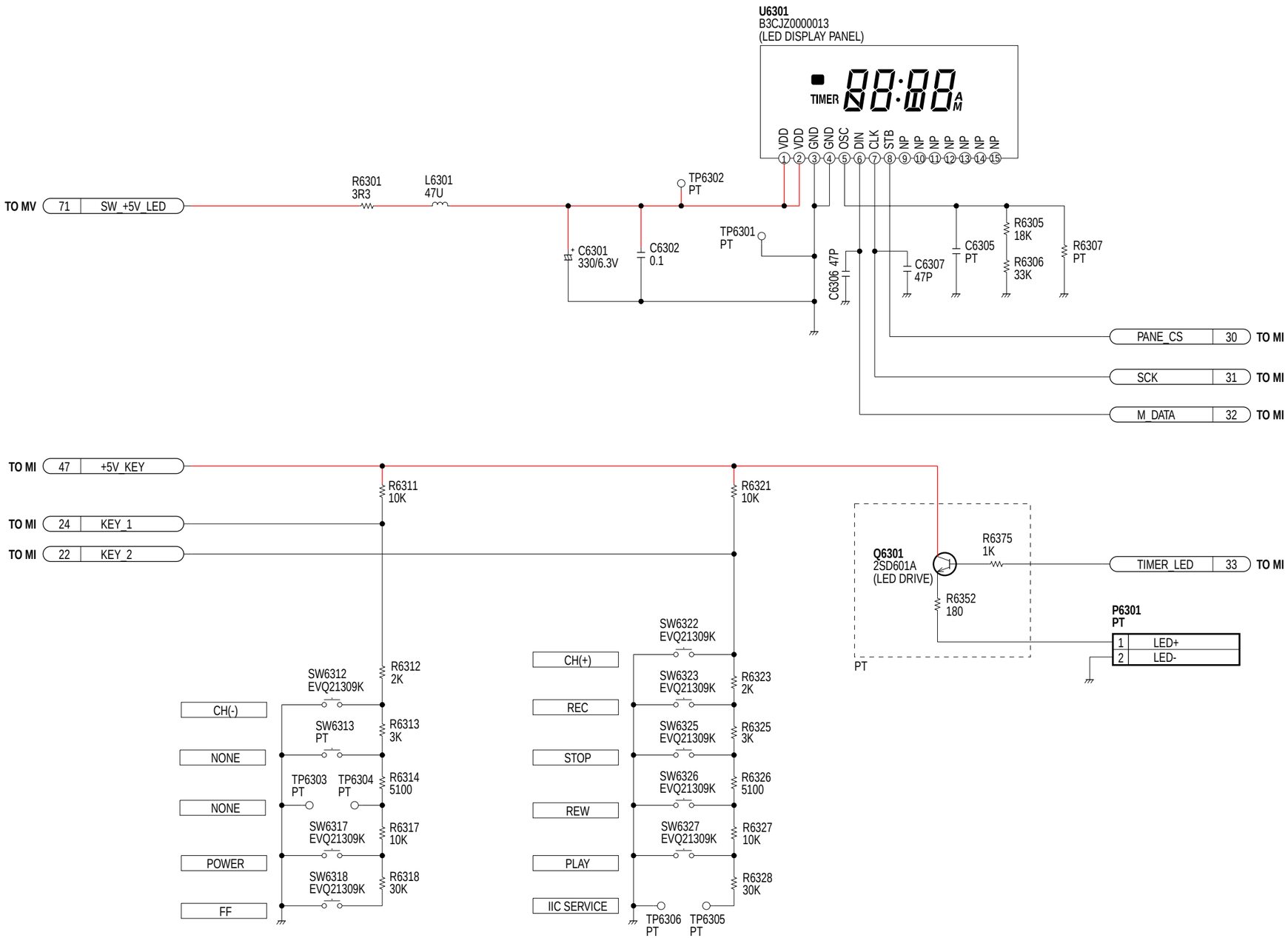
NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT



LINK TO VOLTAGE CHART

LSJB2202
MAIN III (OPERATION) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

NOTE:
PARTS MARKED "PT" ARE NOT USED.

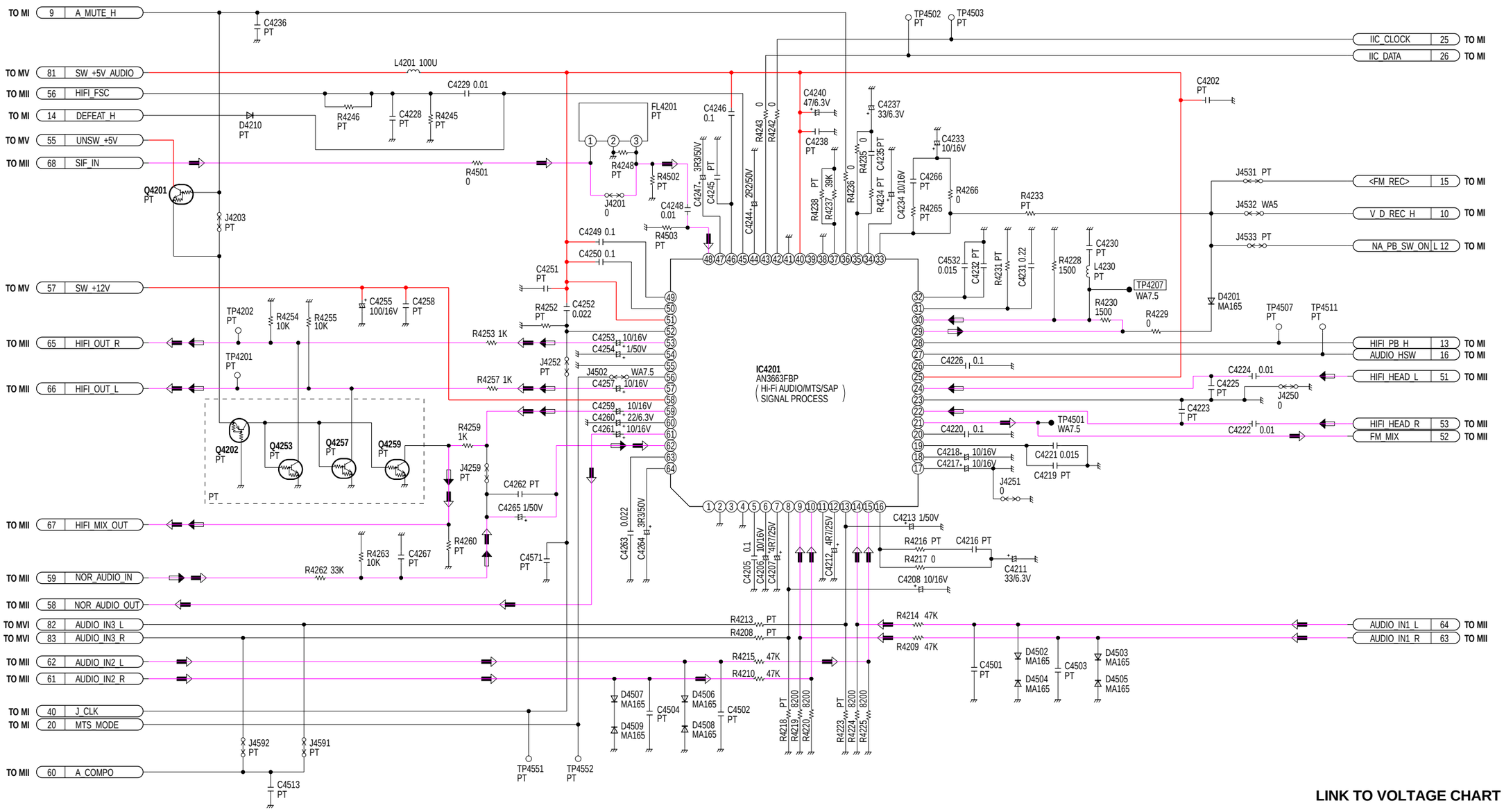
NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT

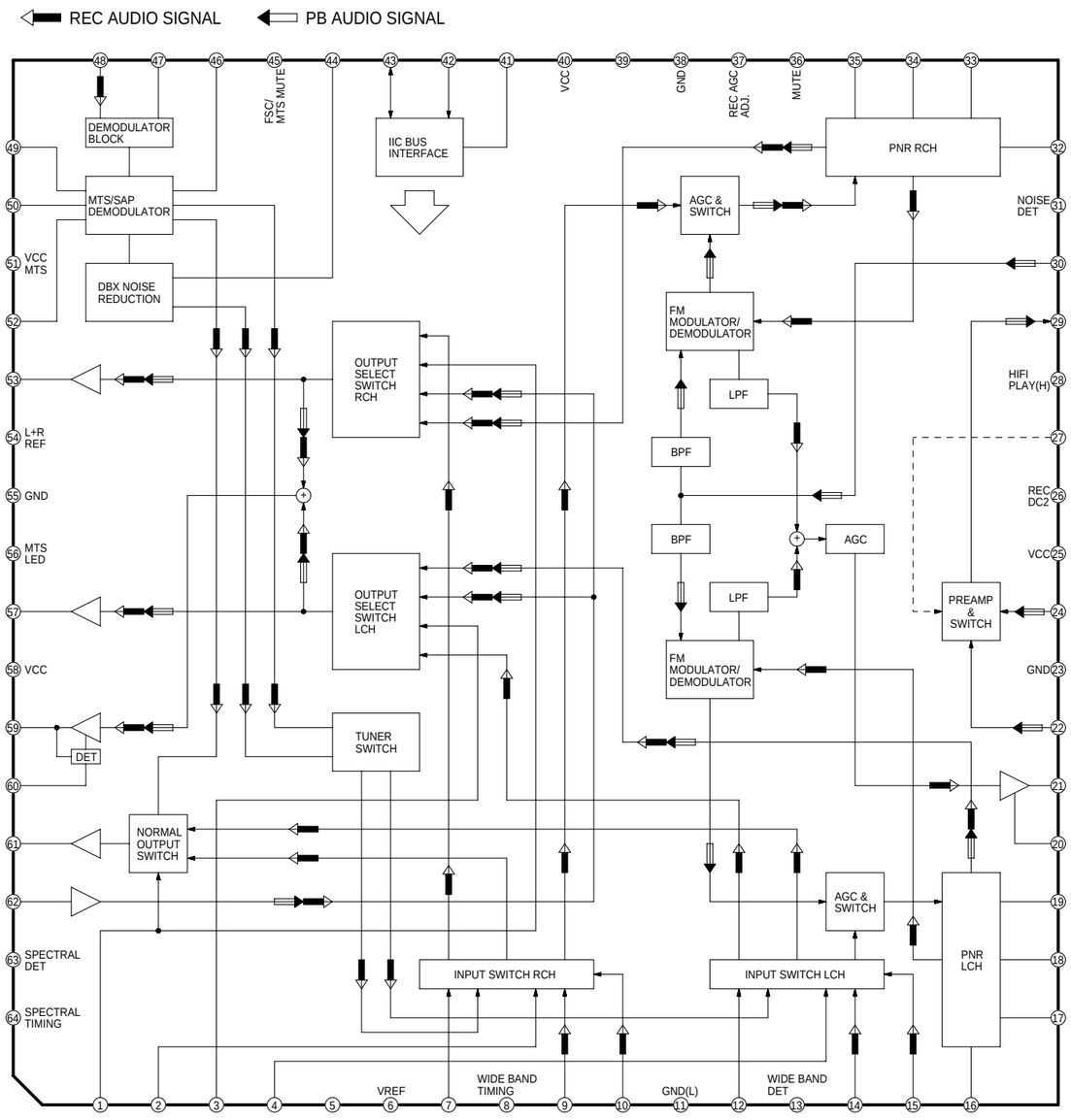
REC AUDIO SIGNAL
PB AUDIO SIGNAL



LINK TO VOLTAGE CHART

LSJB2202
MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

IC4201 Hi-Fi AUDIO/MTS SAP SIGNAL PROCESS IC-DETAIL BLOCK DIAGRAM



IC4201 DETAIL BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

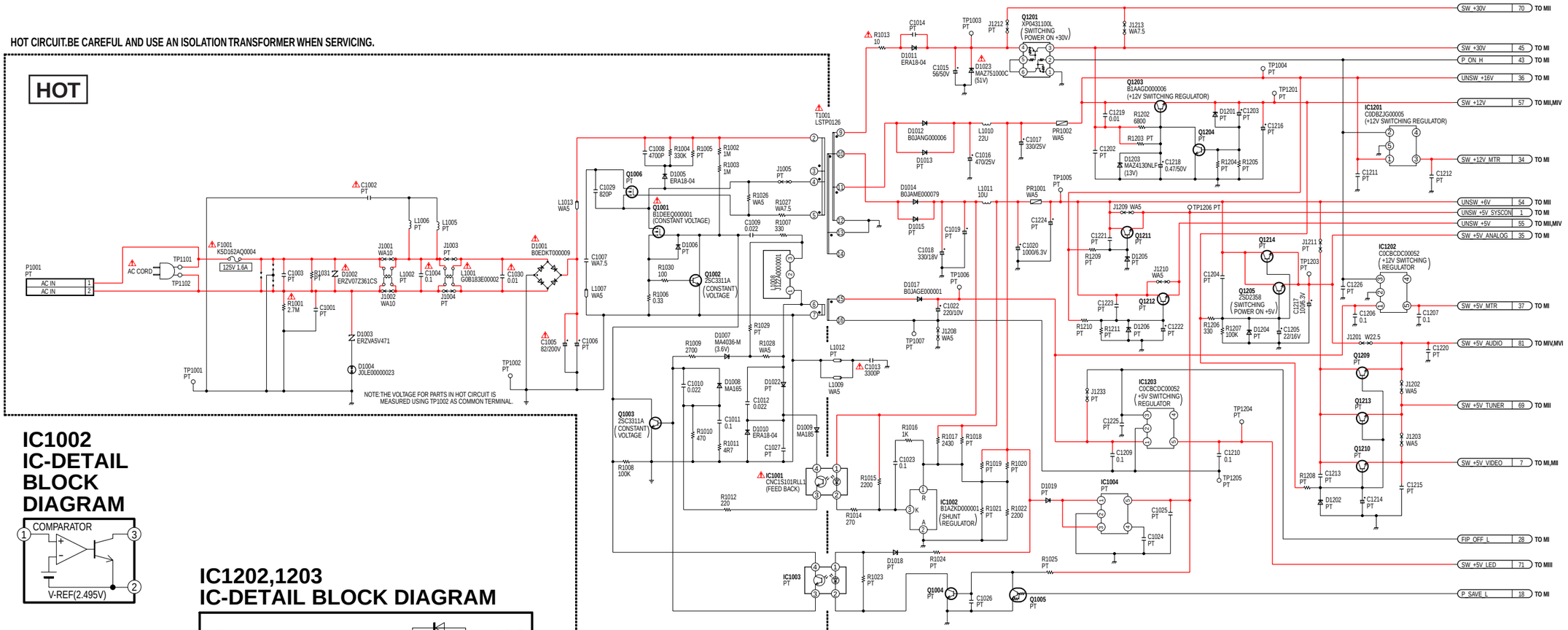
MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

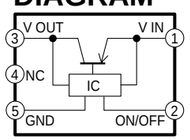
HOT CIRCUIT.BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

HOT

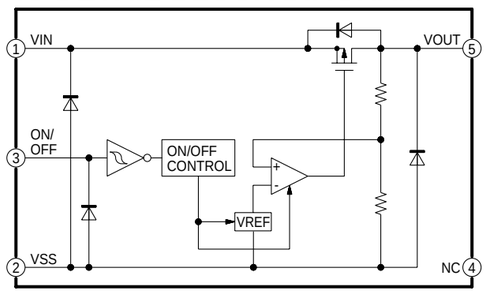


IC1002 IC-DETAIL BLOCK DIAGRAM

IC1201 IC-DETAIL BLOCK DIAGRAM



IC1202,1203 IC-DETAIL BLOCK DIAGRAM



LINK TO VOLTAGE CHART

LSJB2202
MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

MAIN VI (DECODER) SCHEMATIC DIAGRAM

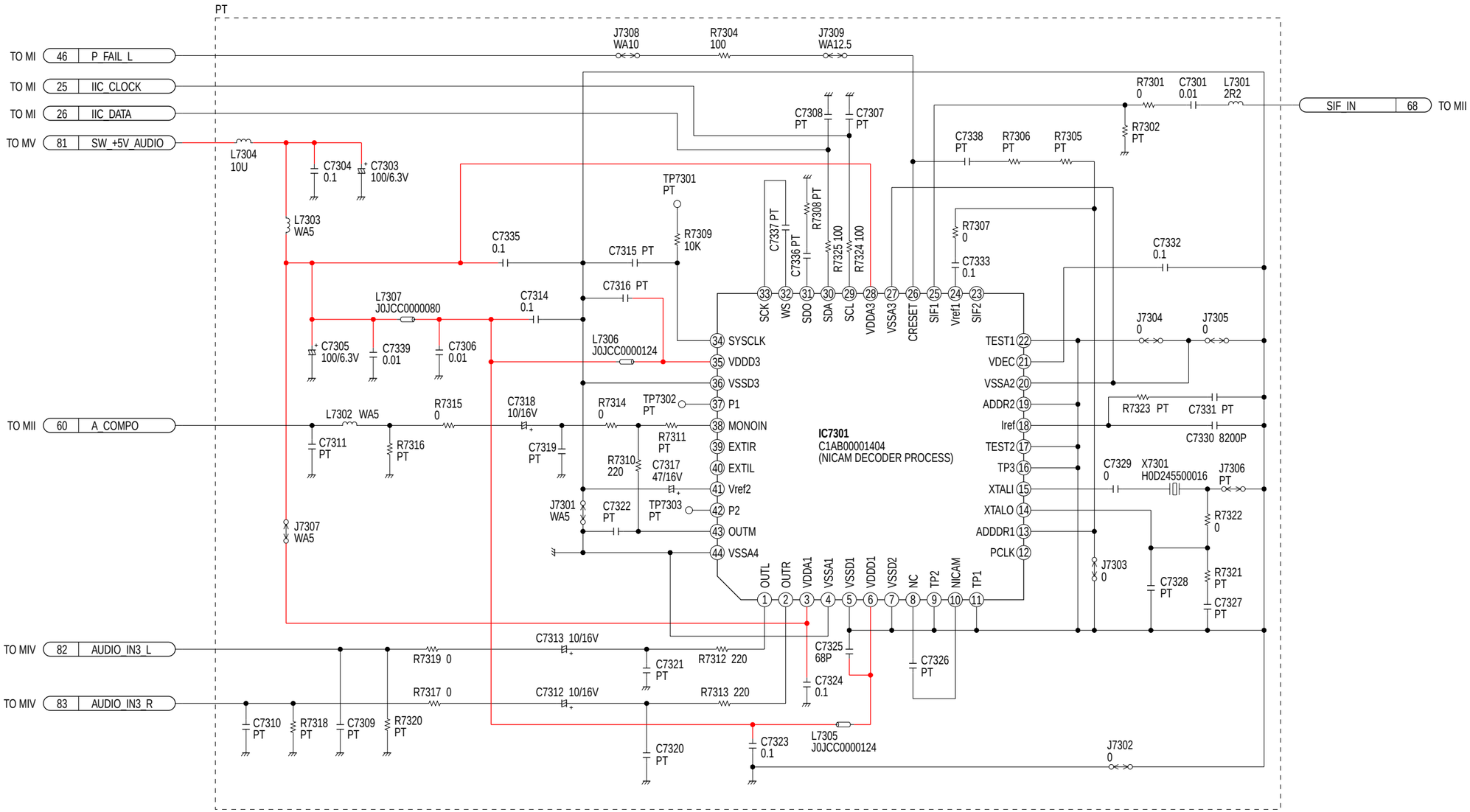
NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
Not Used	PT



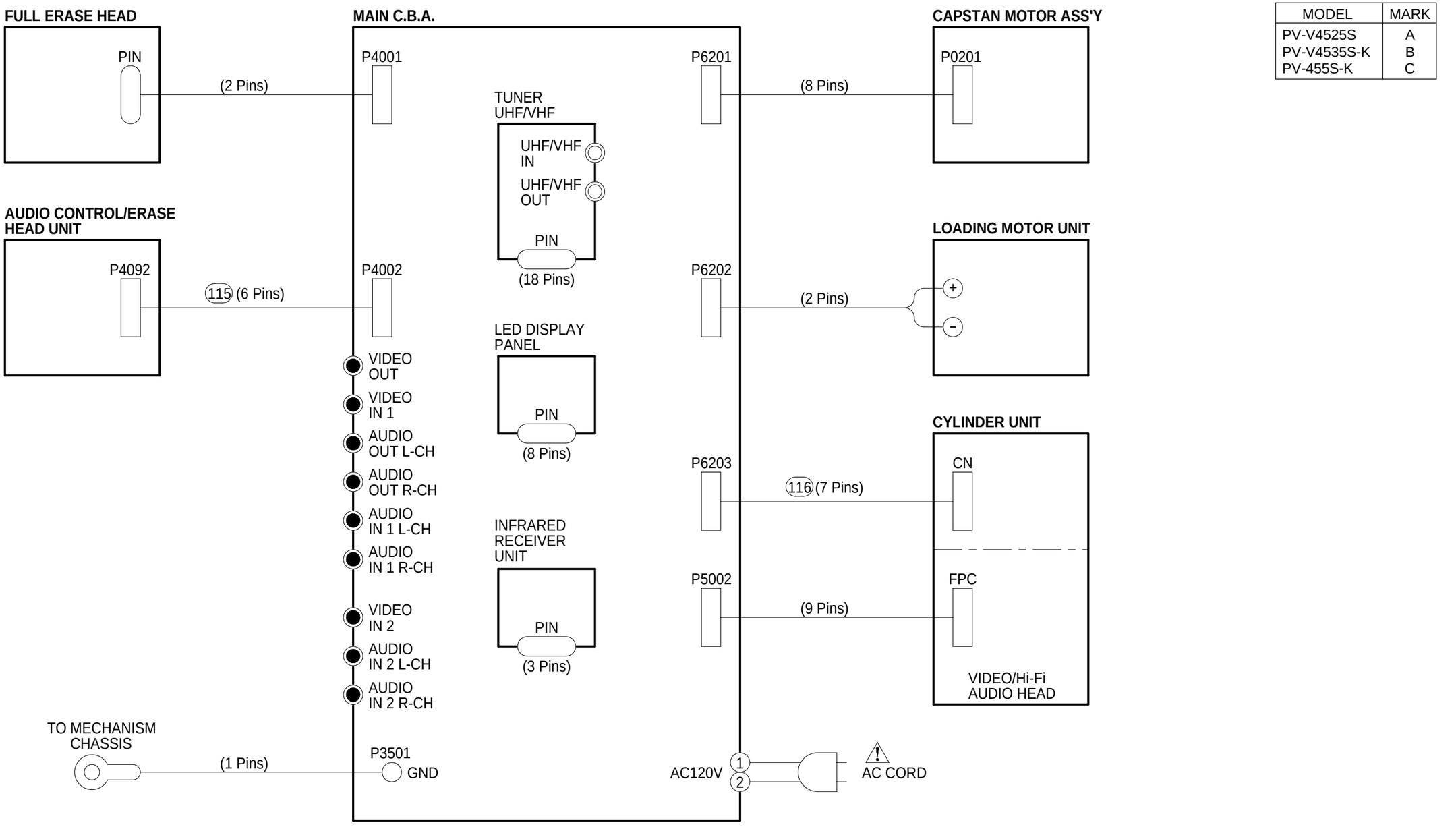
LSJB2202
MAIN VI (DECODER) SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

7.3. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C



INTERCONNECTION SCHEMATIC DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

7.4. VOLTAGE CHART

MAIN C.B.A. (SYSTEM CONTROL/SERVO/OPERATION SECTION)

MODE / PINNO	REC	PLAY
IC6001		
1	5.2	5.2
2	0	0
3	0	0
4	4.9	4.9
5	5.2	5.2
6	0	0
7	5.0	5.2
8	5.1	5.1
9	3.2	3.9
10	0	0
11	4.9	4.9
12	0	0
13	5.2	0
14	5.2	5.0
15	0	0
16	5.1	5.1
17	0	0
18	2.5	2.5
19	0	2.5
20	5.1	0
21	0	0
22	0	0
23	4.0	4.0
24	0	0
25	0	0
26	5.0	0
27	0	0
28	0	0
29	4.7	4.7
30	0	0
31	5.1	5.1
32	5.1	5.1
33	0	0
34	5.1	5.1
35	0	0
36	0	0
37	5.1	5.1
38	-	-
39	-	-
40	0	0
41	0	0
42	0	0
43	5.1	5.1
44	3.1	3.1
45	3.1	3.1
46	0	0
47	1.5	1.5
48	2.3	2.3
49	0	0
50	1.6	1.6
51	0	0
52	1.6	1.6
53	4.9	4.9
54	2.1	2.1

MODE / PINNO	REC	PLAY
55	2.5	2.3
56	1.7	1.7
57	0	0
58	5.0	5.0
59	0	0
60	0	0
61	5.0	5.0
62	0	0
63	0	0
64	0	0
65	0	0
66	4.8	4.8
67	0	0
68	5.0	5.0
69	0	0
70	5.0	5.0
71	3.3	3.3
72	3.0	3.0
73	0	0
74	0	0
75	0	0
76	2.4	2.4
77	2.4	2.4
78	5.2	5.2
79	4.7	4.7
80	3.8	3.8
81	0	0
82	0	0
83	5.0	5.0
84	2.0	2.0
85	0	0
86	2.5	2.6
87	2.6	2.6
88	0	0
89	0	0
90	1.3	1.3
91	2.5	2.6
92	2.5	2.6
93	0	0
94	2.3	2.3
95	2.7	2.5
96	2.5	2.5
97	2.5	2.5
98	5.1	5.1
99	5.2	5.2
100	0	0
IC6002		
1	2.4	2.4
2	1.2	1.2
3	0	0
4	4.2	4.2
IC6003		
1	1.2	1.2
2	0	0
3	0	0

MODE / PINNO	REC	PLAY
4	4.7	4.7
IC6004		
1	0	0
2	0	0
3	0	0
4	0	0
5	3.0	3.0
6	3.3	3.3
7	0	0
8	5.2	5.2
IC6005		
1	5.2	5.2
2	5.2	5.2
3	0	0
4	-	-
5	5.2	5.2
6	-	-
IC6201		
1	11.9	11.9
2	1.8	1.8
3	0	0
4	0.3	0.3
5	0	0
6	0	0
7	16.5	16.5
8	0	0
9	2.8	2.8
10	1.6	1.6
11	1.6	1.6
12	0.7	0.7
13	1.5	1.5
14	2.4	2.4
15	2.5	2.5
16	2.5	2.5
17	2.5	2.5
18	1.3	1.3
19	5.0	5.0
20	3.5	3.5
21	11.9	11.9
22	3.5	3.5
23	3.5	3.5
24	0	0
25	3.5	3.5
26	0	0
27	0	0
Q6003		
E	0	0
C	0.1	0.1
B	0.7	0.7
Q6004		
E	5.2	5.2
C	5.0	5.0
B	4.3	4.3
Q6005		
E	5.1	5.1

MODE / PINNO	REC	PLAY
C	5.1	5.1
B	4.4	4.4
Q6006		
E	0	0
C	5.1	5.1
Q6007		
E	0	0
C	5.1	5.1
Q6008		
E	0	0
C	5.1	5.1
B	0	0
Q6009		
E	2.2	2.2
C	0	0
B	1.6	1.6
TP6001	0	0
TP6002	5.2	5.2
TP6003	5.2	5.2
TP6004	0	0
TP6005	5.1	5.1
TP6006	5.1	5.1
TP6007	1.6	1.6
TP6008	1.6	1.6
TP6009	5.1	5.1
TP6010	1.6	1.6
TP6011	5.1	5.1
TP6012	3.3	3.3
TP6013	3.0	3.0
TP6014	0	0
TP6015	0	0
TP6016	5.1	5.1
TP6017	5.1	5.1
TP6018	4.2	4.2
TP6019	0	0
TP6020	0	0
TP6021	4.2	4.2
TP6022	5.1	5.1
TP6023	1.7	1.7
TP6028	0	0
TP6030	4.8	4.8
TP6032	5.0	5.0
TP6033	0	0
TP6034	5.0	5.0
TP6035	5.2	5.2
TP6036	4.9	4.9
TP6040	0	0
TP6102	0	0
TP6134	5.1	5.1
TP6201	2.4	2.4
TP6202	2.4	2.4
TP6203	2.4	2.4
TP6204	2.4	2.4
TP6205	2.5	2.5
TP6206	2.7	2.5

MODE / PINNO	REC	PLAY
TP6207	2.5	2.5
TP6208	2.5	2.6
TP6301	0	0
TP6302	5.2	5.2
TP6303	0	0
TP6304	5.2	5.2
TP6305	5.2	5.2
TP6306	0	0
TP6405	0	0
TP6803	5.1	5.1

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (POWER SUPPLY/VIDEO/AUDIO SECTION)

MODE / PIN NO.	STOP
IC1001	
1	5.3
2	4.2
3	1.5
4	12.7
IC1002	
K	0
R	3.6
A	2.5
IC1201	
1	17.2
2	4.9
3	12.0
4	0
5	0
IC1202	
1	6.1
2	0
3	4.9
4	0
5	5.0
IC1203	
1	5.9
2	0
3	5.0
4	0
5	5.0
IC3001	
1	0
2	0
3	0
4	5.0
5	2.1
6	2.6
7	2.8
8	1.9
9	1.9
10	1.9
11	2.6
12	1.8
13	0
14	2.8
15	2.8
16	2.0
17	2.8
18	2.0
19	2.8
20	0
21	2.8
22	5.0
23	2.3
24	0
25	0
26	3.0
27	0

MODE / PIN NO.	STOP
28	0
29	2.2
30	2.8
31	0.4
32	2.3
33	2.1
34	0
35	3.0
36	2.3
37	3.0
38	2.2
39	1.4
40	2.1
41	2.7
42	2.0
43	2.1
44	0
45	3.2
46	3.2
47	5.0
48	4.8
49	3.1
50	5.0
51	1.8
52	5.0
53	2.5
54	0
55	1.9
56	0
57	2.2
58	2.2
59	4.8
60	4.8
61	3.9
62	2.3
63	2.2
64	2.3
65	2.2
66	2.3
67	2.2
68	1.2
69	1.9
70	2.7
71	0
72	4.8
73	3.6
74	3.4
75	2.7
76	2.2
77	2.8
78	0
79	0
80	2.3
81	0
82	0

MODE / PIN NO.	STOP
83	3.3
84	4.9
85	2.2
86	2.2
87	2.2
88	0
89	2.2
90	2.2
91	2.2
92	5.0
93	0.5
94	2.5
95	2.5
96	2.5
97	0
98	2.3
99	0
100	2.6
IC4201	
1	2.3
2	0
3	2.3
4	0
5	2.3
6	2.4
7	2.1
8	0.3
9	0
10	0
11	0
12	2.1
13	2.5
14	0
15	0
16	2.5
17	0.7
18	2.5
19	2.5
20	2.0
21	2.0
22	2.0
23	0
24	2.0
25	4.9
26	2.0
27	0
28	4.1
29	1.4
30	0.7
31	0.1
32	2.4
33	2.4
34	0.7
35	2.5
36	0

MODE / PIN NO.	STOP
37	1.6
38	0
39	0.1
40	4.9
41	0
42	3.6
43	3.4
44	2.3
45	0
46	3.3
47	2.2
48	2.2
49	3.4
50	3.3
51	4.9
52	3.3
53	5.8
54	2.4
55	0
56	0
57	5.8
58	12.2
59	5.9
60	0.1
61	2.4
62	2.4
63	2.5
64	0.5
Q1001	
S	0
G	1.4
D	101
Q1002	
E	0
C	1.4
B	0
Q1003	
E	0
C	1.4
B	0.4
Q1201	
1	0
2	4.9
3	32.1
4	32.1
5	0
6	0
Q1203	
E	12.2
C	17.2
B	12.8
Q1205	
E	5.1
C	5.2
B	5.9

MODE / PIN NO.	STOP
Q3012	
E	0
C	0
B	0
Q3030	
E	0.9
C	5.0
B	1.5
Q3060	
E	1.5
C	4.8
B	2.2
Q3301	
E	2.3
C	0
B	1.5
Q4101	
E	5.1
C	5.0
B	0
Q4102	
E	0
C	0
B	0.8
Q4103	
E	0
C	0
B	0.8
Q4105	
E	0
C	0.2
B	0.2
Q4106	
E	5.2
C	0.2
B	5.2
Q4107	
E	0
C	5.2
B	0
TP1001	0
TP1002	0
TP1003	32.1
TP1004	16.5
TP1005	5.8
TP1006	5.9
TP1007	0
TP1201	12.2
TP1203	5.1
TP1204	5.0
TP1205	0
TP1206	5.8
TP3001	2.3
TP3002	2.2
TP3003	0

MODE / PIN NO.	STOP
TP3004	0
TP3100	0
TP4002	0
TP4201	0
TP4202	0
TP4207	0.7
TP4501	2.0
TP4502	3.4
TP4503	3.6
TP4507	4.1
TP4511	0
TP4551	0
TP4552	0
TP7301	0
TP7302	0
TP7303	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

8 CIRCUIT BOARD LAYOUT

8.1. MAIN C. B. A.

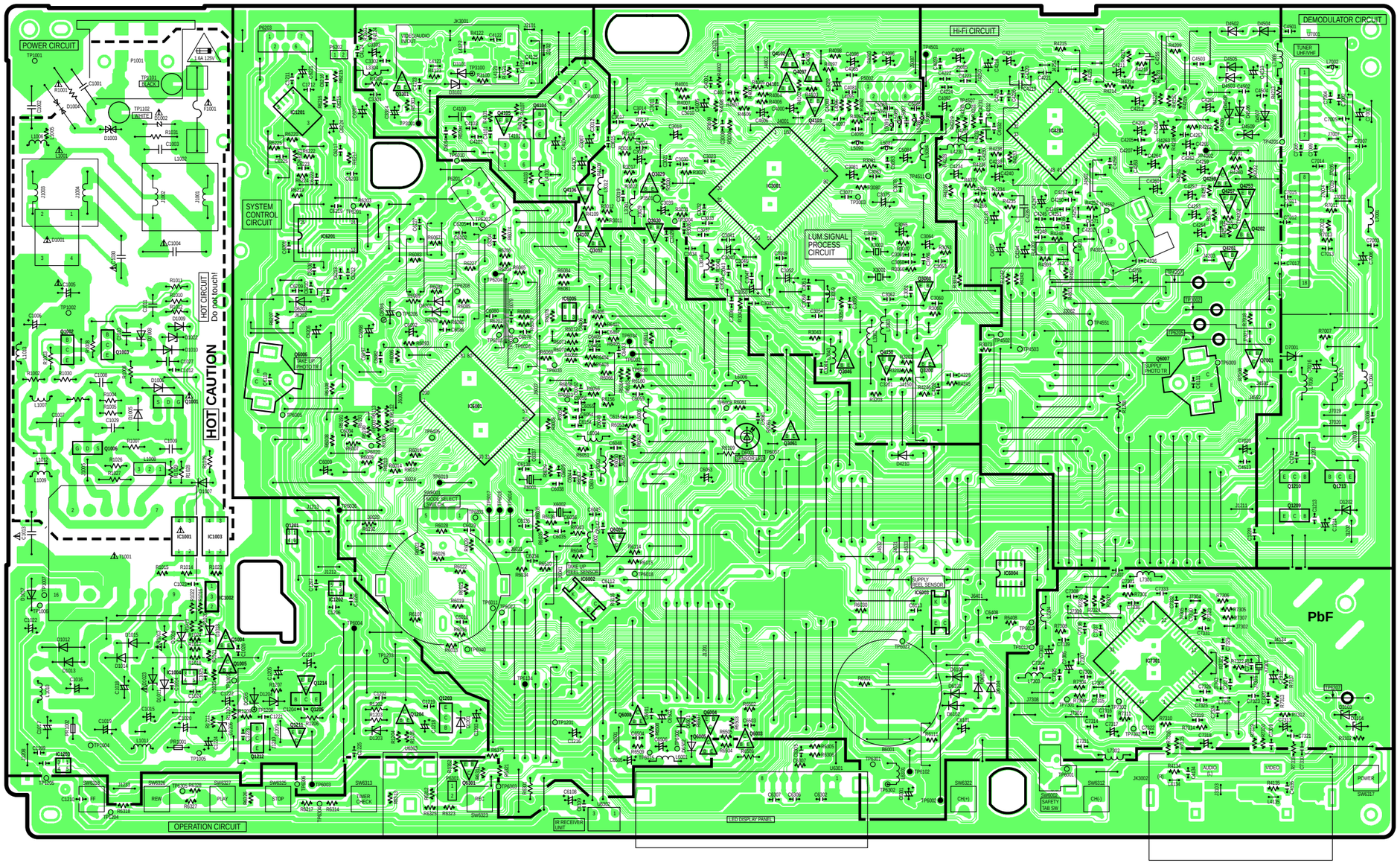
MAIN C.B.A. LSEP2202HV (A) / LSEP2202HK (B,C)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE 1.6A 125V.
1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.



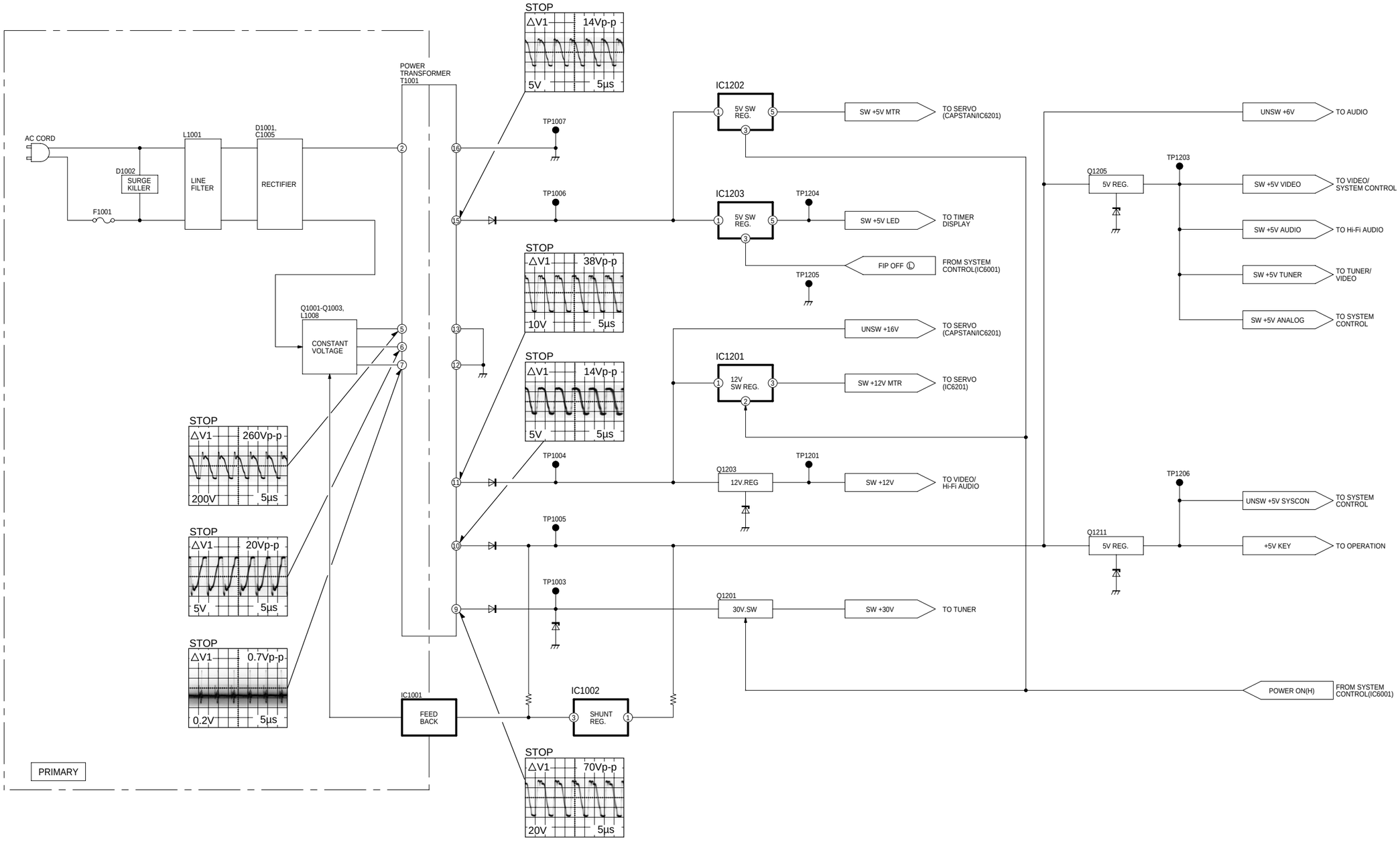
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C

MAIN C.B.A. LSEP2202HV / LSEP2202HK
PV-V4525S/PV-V4535S-K/PV-455S-K

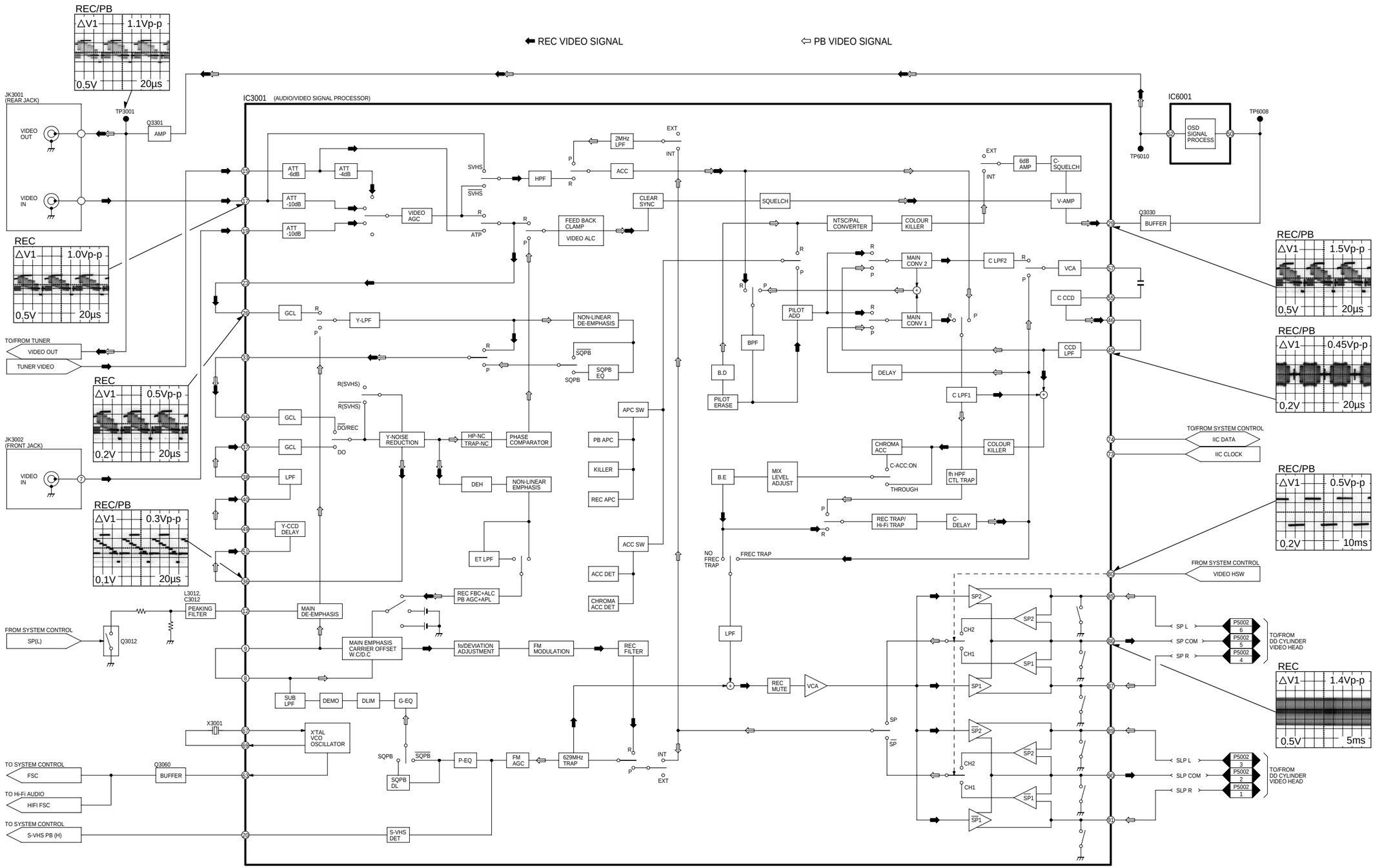
9 BLOCK DIAGRAMS

POWER SUPPLY BLOCK DIAGRAM



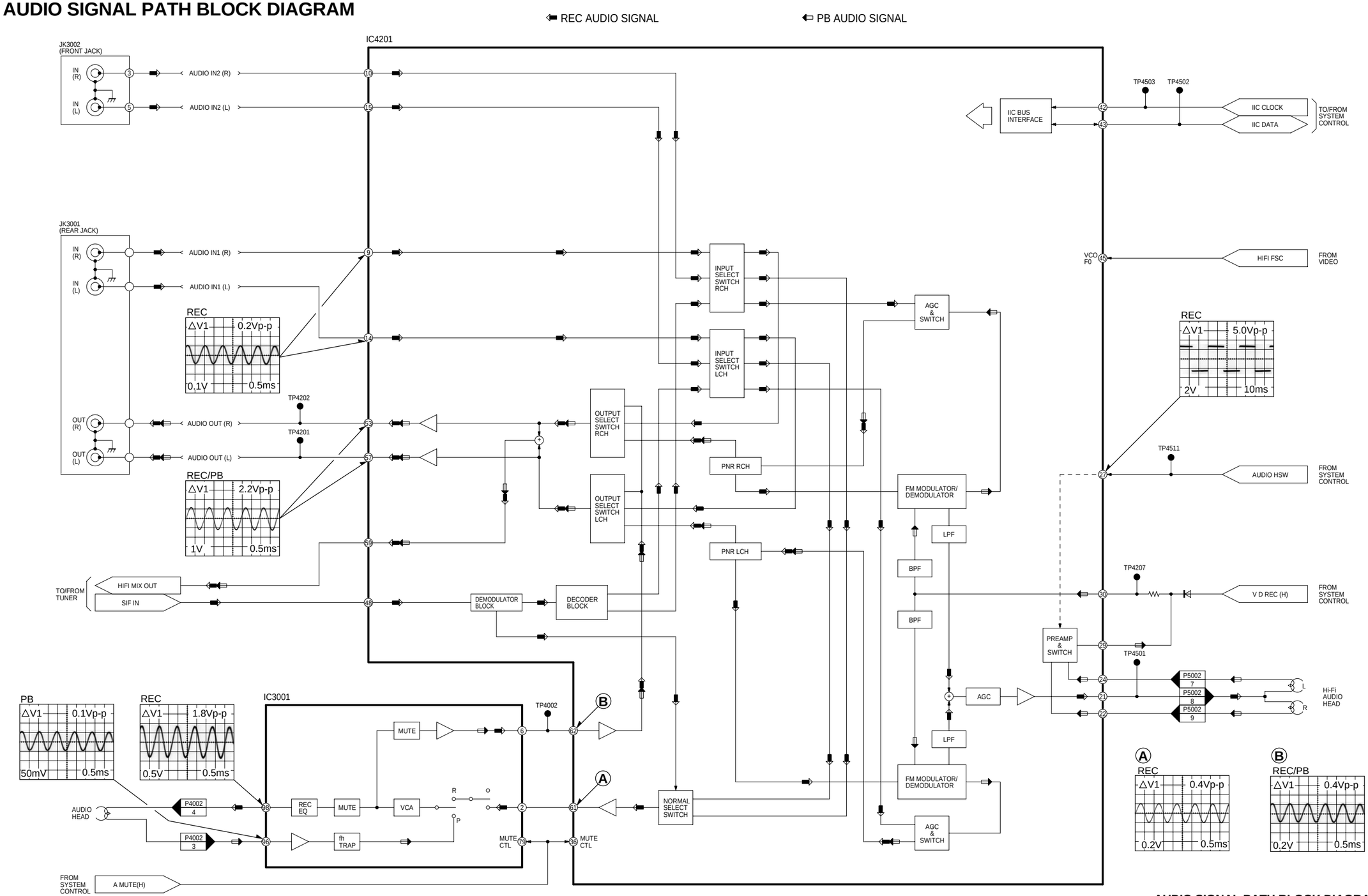
POWER SUPPLY BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

VIDEO SIGNAL PATH BLOCK DIAGRAM



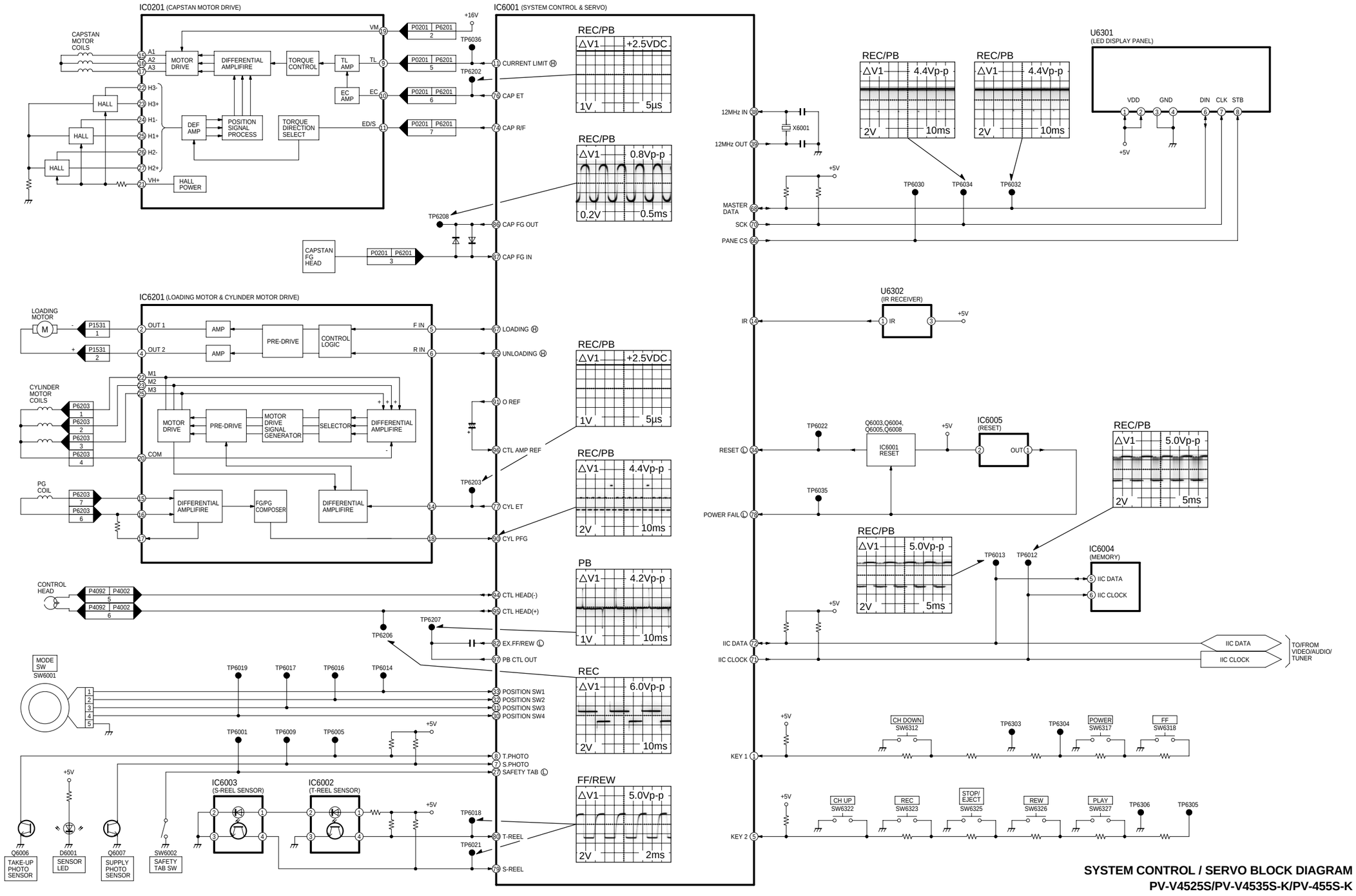
VIDEO SIGNAL PATH BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

AUDIO SIGNAL PATH BLOCK DIAGRAM



AUDIO SIGNAL PATH BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

SYSTEM CONTROL / SERVO BLOCK DIAGRAM

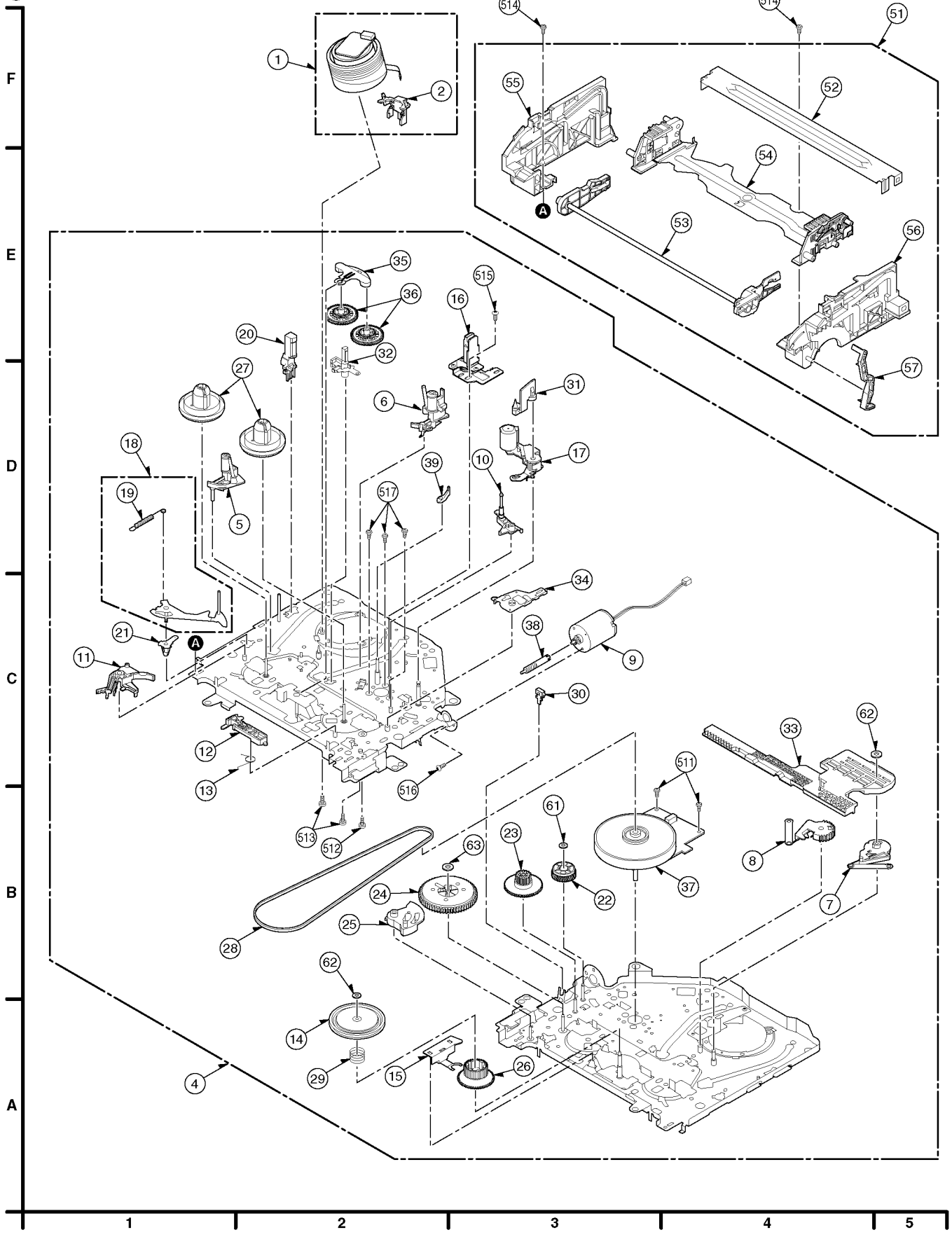


SYSTEM CONTROL / SERVO BLOCK DIAGRAM
PV-V4525S/PV-V4535S-K/PV-455S-K

10 EXPLODED VIEWS

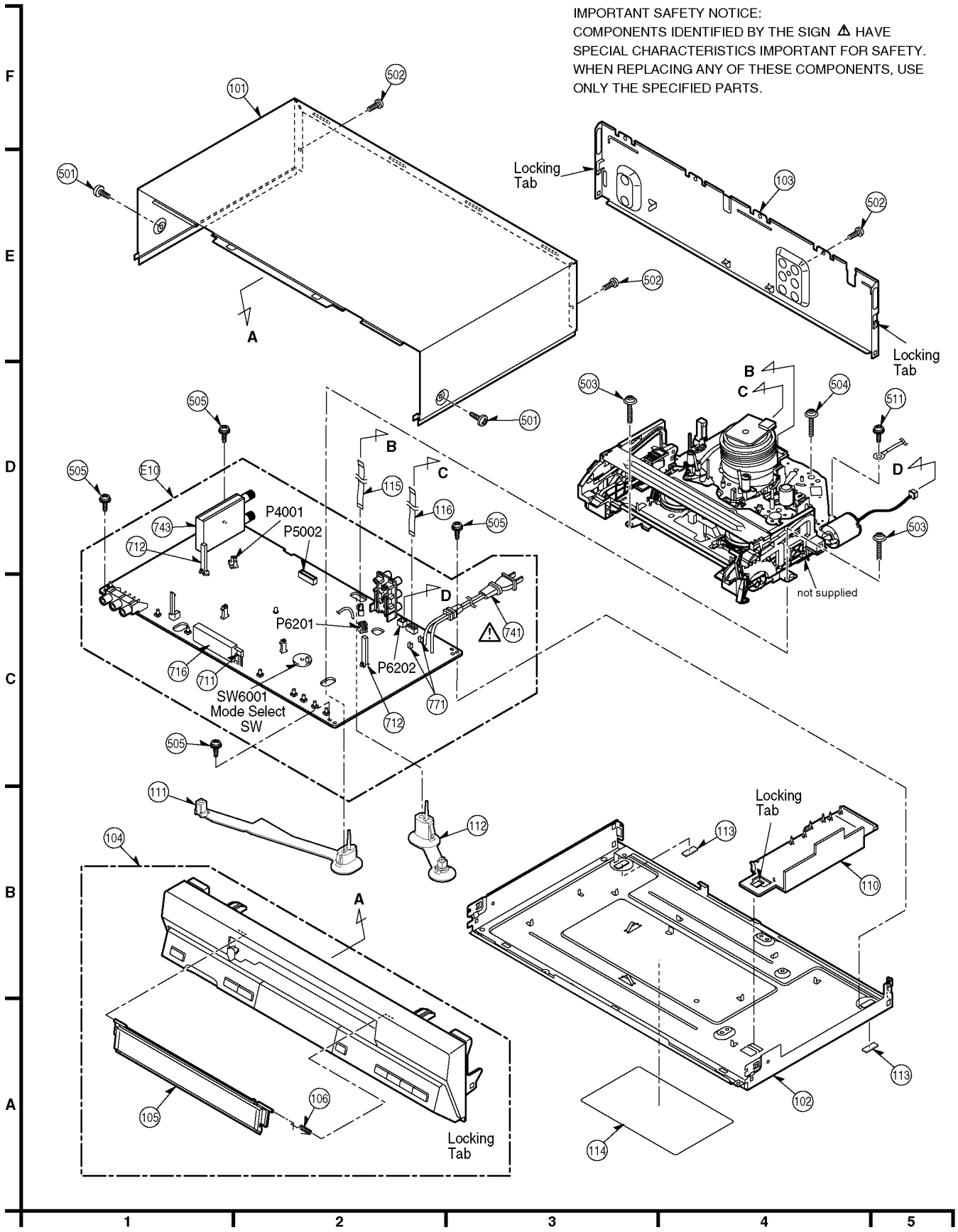
10.1. MECHANISM SECTION

❶ MECHANISM SECTION



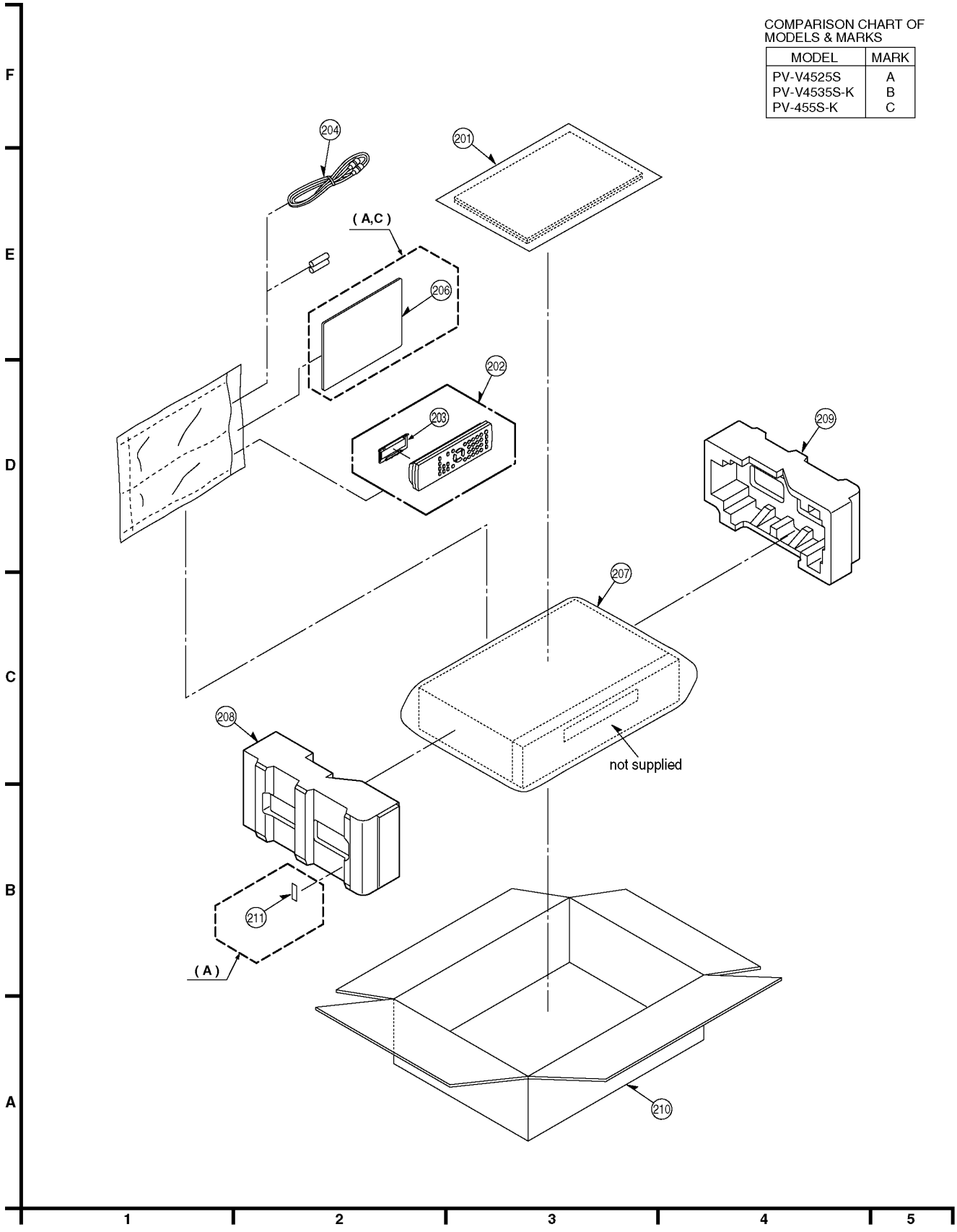
10.2. CHASSIS FRAME AND CASING PARTS SECTION

❷ CHASSIS FRAME AND CASING PARTS SECTION



10.3. PACKING PARTS AND ACCESSORIES SECTION

❸ PACKING PARTS AND ACCESSORIES SECTION



11 REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

11.1. REPLACEMENT NOTES

11.1.1. General Notes

1. Use only original replacement parts:

   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the “ELECTROSTATICALLY SENSITIVE (ES) DEVICES” section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

6. Definition of Parts supplier:

   a. Parts with mark "MKE" in the Remarks column are supplied from MKE.

   b. Parts without mark in the Remarks column are supplied from MKI.

7. Item numbers with capital letter E (Example: E10, E20, ...) in the Ref. No. column are shown in the exploded views.

8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

11.1.2. Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.

2. The Mechanical Chassis Sub Ass’y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Kit (Ref. No. 1), and the Cassette Up Ass’y (Ref. No. 51).

   After replacing the Mechanical Chassis Sub Ass’y, be sure to perform “TAPE INTERCHANGEABILITY ADJUSTMENT” in Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

3. Cylinder is supplied as a Cylinder Kit (Ref. No. 1) only. Cylinder Kit consists of a Cylinder and a Main FPC Holder (Ref. No.2). However, FPC Holder (Ref. No.2) is available separately as a replacement part.

4. The Infrared Remote Control Unit (Ref. No. 202) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit.

5. FPC Holder (Ref. No. 2) is not reusable. If removed, install a new one.

11.1.3. Electrical Replacement Notes

1. Unless otherwise specified;

   All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.

2. Abbreviation

RTL:	Retention Time Limited This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
NR	Non Repairable Board Ass’y
MGF CHIP:	Metal Glaze Film Chip
C CHIP:	Ceramic Chip
COMPLX CMP:	Complex Component
W FLMPRF:	Wirewound Flameproof
C.B.A.:	Circuit Board Assembly
P.C.B.:	Printed Circuit Board
E.S.D.:	Electrostatically Sensitive Devices

3. When replacing 0 .resistor, a wire can be substituted for it.

4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

5. EEP ROM IC (IC6004), MAIN C.B.A. replacement note:

   After replacing EEP ROM IC (IC6004) or MAIN C.B.A., be sure to perform the “PG SHIFTER ADJUSTMENT” in ELECTRICAL ADJUSTMENT procedures.

11.2. MECHANICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C

Definition of Parts supplier:

1. **Parts with mark "MKE" in the Remarks column are supplied from MKE.**
2. **Parts without mark in the Remarks column are supplied from MKI.**

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	LSVD0010	CYLINDER KIT	1
2	VMD4983	FPC HOLDER	1
4	LSXY0863	MECHANICAL CHASSIS SUB ASS´Y	1 RTL
5	VXA7105	SUPPLY SHAFT HOLDER UNIT	1
6	VXA7106	TAKE UP SHAFT HOLDER UNIT	1
7	VXL3107	SUPPLY LOADING ARM UNIT	1
8	VXL3108	TAKE UP LOADING ARM UNIT	1
9	VEM0796	LOADING MOTOR UNIT	1
10	VXL3110	P5 ARM UNIT	1
11	VXL3112	SUPPLY BRAKE ARM UNIT	1
12	VXL3121	TAKE UP BRAKE ARM UNIT	1
13	VMB3548	TAKE UP BRAKE SPRING	1
14	VXP2133	CENTER CLUTH UNIT	1
15	VXL3124	CHANGING LEVER UNIT	1
16	LSEH0008	AUDIO CONTROL/ERASE HEAD UNIT	1
17	VXL3109	PINCH ARM UNIT	1
18	VXL3111	TENSION ARM UNIT	1
19	VMB3547	TENSION SPRING	1
20	L1AZ00000004	FULL ERASE HEAD	1
21	VDB1431	TENSION ARM BOSH	1
22	VXP2168	TORQUE CLUTCH UNIT	1
23	VDG1510	INTERMEDIATE GEAR	1
24	VDG1511	MAIN CAM GEAR	1
25	VXA7311	SECTOR GEAR UNIT	1
26	VDG1514	CHANGE GEAR	1
27	VDR0372	REEL TABLE	1
28	VDV0391	CAPSTAN BELT	1
29	VMB3550	CHANGING GEAR SPRING	1
30	VMD4987	WORM BEARING	1
31	VMD4252	OPENER PIECE	1
32	VMD4253	LED PRISM	1
33	VML3624	MAIN LEVER	1
34	VML3626	PINCH CHARGE ARM	1
35	VML3632	IDLER ARM	1
36	VDG1512	IDLER GEAR	1
37	VEM0800	CAPSTAN ASS´Y	1
38	VDG1637	WORM GEAR	1
39	VMX3377	P4 CAP	1
51	VXA7108	CASSETTE UP ASS´Y	1
52	VMA0L25	TOP PLATE	1
53	VXL3160	MAIN SHAFT UNIT	1
54	VXA7110	CASSETTE HOLDER UNIT	1
55	VMD4255	SIDE PLATE L	1
56	VMD4254	SIDE PLATE R	1
57	VML3706	OPENER LEVER	1
61	VMX2208	WASHER,NYLON	1
62	VMX3196	WASHER,NYLON	1
63	VMX2699	WASHER,NYLON	1
101	LSKM1082	TOP PANEL	2
102	LSMK0847	BOTTOM COVER	2
103	LSMK0851	REAR COVER	2
104	VYPS7170	FRONT PANEL ASS´Y	2
105	LSGP0439	CASSETTE DOOR-LID	2
106	LSMB0310	CASSETTE DOOR SPRING	2
110	LSGF0531	POWER BARRIER	2
111	VMX3115	MECHA SPACER F	2
112	VMX3272	MECHA SPACER R	2
113	VKA0364	FOOT	2
114	LSQL1814	CAUTION LABEL	2
115	VWJ1652	FLEXIBLE FLAT CALBE W/OUT PLUG	2
116	VWJ07OW210MM	FLEXIBLE FLAT CABLE W/OUT PLUG	2
201	LSQF0864	FAN BAG (A)	3
201	LSQF0926	FAN BAG (B)	3
201	LSQF0930	FAN BAG (C)	3
202	EUR7723KB0	INFRARED REMOTE CONTROL UNIT (A,C)	3
202	EUR7723KC0	INFRARED REMOTE CONTROL UNIT (B)	3
203	EUR77EC2406A	BATTERY COVER	3
204	LSJA0418	VHF CONNECTING CABLE W/PLUG,0V	3
206	VPN5965Z	ACCESSORY PAD,PAPER (A,C)	3
207	LSPF0056	SHEET,POLYETHYLENE	3
208	LSPN0560	CUSHION L,STYROFOAM	3
209	LSPN0561	CUSHION R,STYROFOAM	3
210	LSPG1869	PACKING CASE,PAPER (A)	3
210	LSPG1974	PACKING CASE,PAPER (B)	3
210	LSPG1975	PACKING CASE,PAPER (C)	3
211	N9ZZ00000027	SECURITY TAG (A)	3
501	XTW3+5TFN	SCREW,STEEL	2
502	XTB3+8JFN	SCREW,STEEL	2
503	LSHD0104-FJ	SCREW,STEEL	2
504	LSHD0103-FJ	SCREW,STEEL	2
505	XTW3+6TFJ	SCREW,STEEL	2
511	XTV26+5FFJ	TAPPING SCREW,STEEL	1,2
512	VHD1095	SCREW,STEEL	1
513	VHD1117	SCREW,STEEL	1
514	XTV26+8FFJ	TAPPING SCREW,STEEL	1
515	VHD1044	SCREW,STEEL	1
516	XYN3+C4FJ	SCREW,STEEL	1
517	XTN26+7JFJ	SCREW,STEEL	1
711	PNA4618M01KT	INFRARED RECEIVER UNIT	2
712	VMD4258	PHOTO SENSOR HOLDER	2
716	B3CJZ0000013	LED DISPLAY PANEL	2
741	LSJA0360	AC CORD W/PLUG,AC 120V	2 ⚠
743	J3AAADB00004	TUNER UHF/VHF NR	2
771	EYF52BCY	FUSE HOLDER	2
E10	LSEP2202HV	MAIN C.B.A. (A)	2 RTL
E10	LSEP2202HK	MAIN C.B.A. (B,C)	2 RTL

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	MKE
	VFKS0081	GREASE	MKE
	VFK0329	POST ADJUSTMENT DRIVER	MKE
	VFK27	HEAD CLEANING STICK	MKE
	VFK0330	H-POSITION ADJUSTMENT DRIVER	MKE
	VFK1301	SILICONE GREAS	MKE

11.3. ELECTRICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C

Definition of Parts supplier:

1. **All parts are supplied from MKI.**

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP2202HV	MAIN C.B.A. (A)	E.S.D. RTL
E10	LSEP2202HK	MAIN C.B.A. (B,C)	E.S.D. RTL

11.3.1. MAIN C.B.A.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4525S	A
PV-V4535S-K	B
PV-455S-K	C

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	CNC1S101RLL1	IC, LINEAR	⚠
IC1002	B1AZKD000001	IC, LINEAR	
IC1002	C0DAEMB00004	IC, LINEAR	
IC1002	C0DAEMZ00005	IC, LINEAR	
IC1201	C0DBZJG00005	IC, LINEAR	
IC1202	C0CBCDC00052	IC, LINEAR	
IC1203	C0CBCDC00052	IC, LINEAR	
IC3001	C1AB00002002	IC, LINEAR	
IC4201	AN3663FBP-V	IC, LINEAR	
IC6001	C2CBHF000401	IC, 16BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPUTER	
IC6003	B3NAA0000049	PHOTO INTERRUPUTER	
IC6004	C3EBCC000053	IC, 1K EEP ROM	E.S.D.
IC6005	C0EBH0000172	IC, CMOS STANDARD LOGIC	E.S.D.
IC6005	C0EBH0000263	IC, CMOS STANDARD LOGIC	E.S.D.
IC6005	C0EBH0000449	IC, CMOS STANDARD LOGIC	E.S.D.
IC6201	C1AB00001767	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	B1DEEQ000001	TRANSISTOR FET	⚠
Q1001	B1DEEQ000006	TRANSISTOR FET	⚠
Q1002	2SC3311ARA	TRANSISTOR SI NPN	
Q1003	2SC3311ARA	TRANSISTOR SI NPN	
Q1201	XP0431100L	TRANSISTOR COMPLX CMP SI PNP/NPN CHIP	
Q1203	B1AAGD000006	TRANSISTOR SI NPN	
Q1205	2SD235800A	TRANSISTOR SI NPN	
Q1205	B1AAQB000002	TRANSISTOR SI NPN	
Q3012	UNR221300L	TRANSISTOR SI NPN CHIP	
Q3012	B1GBCFNN0004	TRANSISTOR SI NPN CHIP	
Q3030	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3030	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3060	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3060	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3301	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3301	B1ADCC000004	TRANSISTOR SI PNP CHIP	
Q3301	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3301	B1ADCF000077	TRANSISTOR SI PNP CHIP	
Q4101	UNR211100L	TRANSISTOR SI PNP CHIP	
Q4101	B1GDCFJJ0002	TRANSISTOR SI PNP CHIP	
Q4102	2SD1819AHL	TRANSISTOR SI NPN CHIP	
Q4102	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4103	2SD1819AHL	TRANSISTOR SI NPN CHIP	
Q4103	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4105	2SD0602ARL	TRANSISTOR SI NPN CHIP	
Q4106	2SB0710A0L	TRANSISTOR SI PNP CHIP	
Q4107	UNR221300L	TRANSISTOR SI NPN CHIP	
Q4107	B1GBCFNN0004	TRANSISTOR SI NPN CHIP	
Q6003	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCC000004	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000106	TRANSISTOR SI NPN CHIP	
Q6004	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCC000004	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000077	TRANSISTOR SI PNP CHIP	
Q6005	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCC000004	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000077	TRANSISTOR SI PNP CHIP	
Q6006	PNA2604M01VT	PHOTO SENSOR UNIT	
Q6007	PNA2604M01VT	PHOTO SENSOR UNIT	
Q6008	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6008	B1ABCC000004	TRANSISTOR SI NPN CHIP	
Q6008	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6008	B1ABCF000106	TRANSISTOR SI NPN CHIP	
Q6009	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6009	B1ADCC000004	TRANSISTOR SI PNP CHIP	
Q6009	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6009	B1ADCF000077	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	B0EDKT000009	DIODE SI	⚠
D1002	ERZV07Z361CS	VARISTORS	⚠
D1003	ERZVA5V471	VARISTORS	
D1004	J0LE00000023	ARRESTER	
D1005	B0HAHP000014	DIODE SI	
D1005	B0HAJP000007	DIODE SI	
D1005	B0HAMP000061	DIODE SI	
D1007	MAZ40360MF	DIODE ZENER 3.6V	
D1008	MA2C165001VT	DIODE SI	
D1008	B0AACK000004	DIODE SI	
D1009	MA2C18500E	DIODE SI	
D1009	B0AADM000003	DIODE SI	
D1010	B0HAHP000014	DIODE SI	
D1010	B0HAJP000007	DIODE SI	
D1010	B0HAMP000061	DIODE SI	
D1011	B0HAHP000014	DIODE SI	
D1011	B0HAJP000007	DIODE SI	
D1011	B0HAMP000061	DIODE SI	
D1012	B0JANG000006	DIODE SI	
D1014	B0JAME000079	DIODE SI	
D1014	B0JAME000049	DIODE SI	
D1014	B0JANE000028	DIODE SI	
D1017	B0JAGE000001	DIODE SI	
D1017	B0JAMD000012	DIODE SI	
D1017	B0JAME000082	DIODE SI	
D1023	MAZ751000C	DIODE ZENER 51V	⚠
D1203	MAZ4130NLF	DIODE ZENER 13V	
D4201	MA2C165001VT	DIODE SI	
D4201	B0AACK000004	DIODE SI	
D4502	MA2C165001VT	DIODE SI	
D4502	B0AACK000004	DIODE SI	
D4503	MA2C165001VT	DIODE SI	
D4503	B0AACK000004	DIODE SI	
D4504	MA2C165001VT	DIODE SI	
D4504	B0AACK000004	DIODE SI	
D4505	MA2C165001VT	DIODE SI	
D4505	B0AACK000004	DIODE SI	
D4506	MA2C165001VT	DIODE SI	
D4506	B0AACK000004	DIODE SI	
D4507	MA2C165001VT	DIODE SI	
D4507	B0AACK000004	DIODE SI	
D4508	MA2C165001VT	DIODE SI	
D4508	B0AACK000004	DIODE SI	
D4509	MA2C165001VT	DIODE SI	
D4509	B0AACK000004	DIODE SI	
D6001	B3EA00000072	SENSOR LED	
D6201	MA2C165001VT	DIODE SI	
D6201	B0AACK000004	DIODE SI	
D6202	MA2C165001VT	DIODE SI	
D6202	B0AACK000004	DIODE SI	
D6501	MA2C165001VT	DIODE SI	
D6501	B0AACK000004	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	D0AF275KA002	CARBON 1/2W 2.7M	⚠
R1002	ERDS2TJ105T	CARBON 1/4W 1M	
R1003	ERDS2TJ105T	CARBON 1/4W 1M	
R1004	ERDS2TJ334T	CARBON 1/4W 330K	
R1006	ERX1SJR33E	METAL OXIDE 1W 0.33	
R1007	ERG2SJ331E	METAL OXIDE 2W 330	
R1008	ERDS2TJ104	CARBON 1/4W 100K	
R1009	ERDS2TJ272	CARBON 1/4W 2.7K	
R1010	ERDS2TJ471T	CARBON 1/4W 470	
R1011	ERDS2TJ4R7T	CARBON 1/4W 4.7	
R1012	ERDS2TJ221	CARBON 1/4W 220	
R1013	ERD25FVJ100T	CARBON 1/4W 10	⚠
R1014	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R1015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1017	ERA6EED2431V	MGF CHIP 1/10W 2.43K	
R1022	ERA6YED222V	MGF CHIP 1/10W 2200	
R1030	ERDS2TJ101	CARBON 1/4W 100	
R1202	ERDS2TJ682T	CARBON 1/4W 6.8K	
R1206	ERDS2TJ331	CARBON 1/4W 330	
R1207	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R3008	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R3009	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3011	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R3012	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R3016	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R3017	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3022	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R3028	ERJ3GEYJ911V	MGF CHIP 1/16W 910	
R3029	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3036	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3041	ERJ3GEYJ685V	MGF CHIP 1/16W 6.8M	
R3042	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3060	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R3066	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R3070	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R3073	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R3074	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R3080	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R3100	ERJ3GEYJ680V	MGF CHIP 1/16W 68	
R3101	ERJ3GEYJ750V	MGF CHIP 1/16W 75	
R3102	ERJ3GEYJ750V	MGF CHIP 1/16W 75	
R3117	ERDS2TJ221	CARBON 1/4W 220	
R3119	ERDS2TJ221	CARBON 1/4W 220	
R3301	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R3302	ERDS2TJ681	CARBON 1/4W 680	
R4003	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4004	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R4079	ERJ3EKF1002V	MGF CHIP1/16W 10K	
R4092	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4093	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R4094	ERJ3GEYJ334V	MGF CHIP 1/16W 330K	
R4097	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R4098	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R4101	ERJ3GEYJ113V	MGF CHIP 1/16W 11K	
R4102	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4103	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4106	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	
R4107	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4108	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R4109	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R4121	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4122	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4123	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4124	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4134	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4135	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4209	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4210	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4214	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4215	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4217	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4219	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4220	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4224	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4225	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4228	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R4229	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4230	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R4235	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4236	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4237	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R4242	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4243	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4253	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4254	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4255	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4257	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4259	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4262	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R4263	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4266	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4501	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4606	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6002	ERJ3GEYJ303V	MGF CHIP1/16W 30K (B,C)	
R6006	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6007	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6008	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6009	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6010	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6013	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6014	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6019	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6022	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6026	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6028	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6029	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R6034	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	
R6035	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6036	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6039	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6047	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6050	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6051	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6052	ERJ3GEYJ181V	MGF CHIP 1/16W 180	
R6053	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6054	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R6056	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R6058	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6061	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6065	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6066	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6067	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6068	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6070	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6071	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6072	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6074	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6078	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6079	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6080	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6081	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R6083	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6084	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R6085	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6086	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R6087	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6089	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6093	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6094	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R6095	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6107	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6108	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6109	ERDS2TJ151T	CARBON 1/4W 150	
R6112	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6113	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6114	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6115	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6116	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R6156	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R6202	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6203	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6204	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6205	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6215	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6216	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6217	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6219	ERJ6GEYJ1R2V	MGF CHIP 1/10W 1.2	
R6220	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6222	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6223	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6224	ERJ6GEYJ1R5V	MGF CHIP 1/10W 1.5	
R6225	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6227	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R6301	ERDS2TJ3R3	CARBON 1/4W 3.3	
R6305	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6306	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R6311	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6312	ERJ3GEYJ202V	MGF CHIP 1/16W 2K	
R6313	ERJ3GEYJ302V	MGF CHIP1/16W 3K	
R6314	ERJ3GEYJ512V	MGF CHIP1/16W 5.1K	
R6317	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6318	ERJ3GEYJ303V	MGF CHIP1/16W 30K	
R6321	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6323	ERJ3GEYJ202V	MGF CHIP 1/16W 2K	
R6325	ERJ3GEYJ302V	MGF CHIP1/16W 3K	
R6326	ERJ3GEYJ512V	MGF CHIP1/16W 5.1K	
R6327	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6328	ERJ3GEYJ303V	MGF CHIP1/16W 30K	
R6403	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6405	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6406	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6407	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6501	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6502	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6503	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R6504	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6505	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6506	ERDS2TJ560T	CARBON 1/4W 56	
R6507	ERJ3GEYJ475V	MGF CHIP 1/16W 4.7M	
R6508	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	
R6509	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R6510	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R7011	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R7012	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R7013	ERJ3GEY0R00V	MGF CHIP 1/16W 0	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1004	F0CAF104A021	POLYESTER 125V 0.1UF	⚠
C1005	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1008	F1B3A4720011	CERAMIC 1KV 4700PF	
C1009	ECQB1H223JF3	POLYESTER 50V 0.022UF	
C1010	ECQB1H223JF3	POLYESTER 50V 0.022UF	
C1011	ECQB1H104JF3	POLYESTER 50V 0.1UF	
C1012	ECJ1VB1H223K	C CHIP 50V 0.022UF	
C1013	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1013	ECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1013	ECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1015	EEUFF1H560H	ELECTROLYTIC 50V 56UF	
C1016	EEUFF1E471B	ELECTROLYTIC 25V 470UF	
C1017	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1018	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1020	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1022	EEUFF1A221H	ELECTROLYTIC 10V 220UF	
C1023	F1H1C104A065	C CHIP 16V 0.1UF	
C1029	ECKN3A821KBP	CERAMIC 1KV 820PF	
C1030	ECKATS103MF	CERAMIC 250V 0.01UF	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C1205	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C1206	F1H1C104A008	C CHIP 16V 0.1UF	
C1207	F1H1C104A008	C CHIP 16V 0.1UF	
C1209	F1H1C104A008	C CHIP 16V 0.1UF	
C1210	F1H1C104A008	C CHIP 16V 0.1UF	
C1217	ECEA0JEE101	ELECTROLYTIC 6.3V 100UF	
C1218	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1219	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3007	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3008	ECJ1VC1H151J	C CHIP 50V 150PF	
C3010	F1H1C104A041	C CHIP 16V 0.1UF	
C3011	F1H1C104A041	C CHIP 16V 0.1UF	
C3012	ECJ1VC1H330J	C CHIP 50V 33PF	
C3014	F1H1C104A041	C CHIP 16V 0.1UF	
C3015	F1H1A105A025	C CHIP 10V 1UF	
C3017	F1H1A105A025	C CHIP 10V 1UF	
C3018	ECEA1HKA4R7	ELECTROLYTIC 50V 4.7UF	
C3019	F1H1A105A025	C CHIP 10V 1UF	
C3021	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C3022	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3023	F1H1C104A041	C CHIP 16V 0.1UF	
C3029	F1H1C104A041	C CHIP 16V 0.1UF	
C3030	F1H1C104A041	C CHIP 16V 0.1UF	
C3032	F1H1A105A025	C CHIP 10V 1UF	
C3033	F1H1C104A041	C CHIP 16V 0.1UF	
C3036	F1H1C104A041	C CHIP 16V 0.1UF	
C3037	F1H1C104A041	C CHIP 16V 0.1UF	
C3039	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C3040	ECEA1CKA100B	ELECTROLYTIC 16V 10UF	
C3041	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C3042	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3046	ECJ1VC1H331J	C CHIP 50V 330PF	
C3049	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C3050	ECEA0JKA470B	ELECTROLYTIC 6.3V 47UF	
C3051	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C3052	ECEA0JKA470B	ELECTROLYTIC 6.3V 47UF	
C3053	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3054	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3058	F1H1A105A025	C CHIP 10V 1UF	
C3059	ECJ1VC1H020C	C CHIP 50V 2PF	
C3060	F1H1C104A008	C CHIP 16V 0.1UF	
C3061	ECJ1VB1H102K	C CHIP 50V 1000PF	
C3062	F1H1C104A041	C CHIP 16V 0.1UF	
C3064	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C3065	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3066	F1H1H472A219	C CHIP 50V 4700PF	
C3068	ECJ1VB1E333K	C CHIP 25V 0.033UF	
C3069	ECJ1VB0J474K	C CHIP 6.3V0.47UF	
C3070	ECJ1VB1C223K	C CHIP 25V 0.022UF	
C3075	ECEA1EKA4R7B	ELECTROLYTIC 25V 4.7UF	
C3083	F1H1C104A008	C CHIP 16V 0.1UF	
C3301	F1H1C104A041	C CHIP 16V 0.1UF	
C3302	F1H1C104A041	C CHIP 16V 0.1UF	
C3303	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3304	F2A0J471A283	ELECTROLYTIC 6.3V 470UF	
C4000	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4005	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4081	ECJ1VC1H150J	C CHIP 50V 15PF	
C4082	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4083	ECJ1VB1H182K	C CHIP 50V 0.0018UF	
C4085	ECJ1VB1H182K	C CHIP 50V 0.0018UF	
C4091	F1H1C104A008	C CHIP 16V 0.1UF	
C4093	ECJ1VB1H102K	C CHIP 50V 1000PF	
C4094	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C4095	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4096	ECEA1CKA330I	ELECTROLYTIC 16V 33UF	
C4098	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4100	ECQB1H333JF3	POLYESTER 50V 0.033UF	
C4101	ECJ1VB1H471K	C CHIP 50V 470PF	
C4102	ECJ2VB1H182K	C CHIP 50V 0.0018UF	
C4103	ECJ1VB1C223K	C CHIP 25V 0.022UF	
C4104	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4205	ECJ1VB1E104K	C CHIP 25V 0.1UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4207	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4208	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4211	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4212	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4213	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4217	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4220	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4221	ECJ1VB1H153K	C CHIP 50V 0.015UF	
C4222	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4224	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4226	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4229	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C4231	ECJ1VF1C224Z	C CHIP 16V 0.22UF	
C4233	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4234	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4237	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4240	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4244	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C4246	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4247	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4248	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4249	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4250	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4252	F1H1E223A029	C CHIP 25V 0.022UF	
C4253	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4254	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4255	ECEA1CKA101	ELECTROLYTIC 16V 100UF	
C4257	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4259	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4260	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4261	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4263	F1H1E223A029	C CHIP 25V 0.022UF	
C4264	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4265	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4532	ECJ1VB1H153K	C CHIP 50V 0.015UF	
C4606	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4607	F1H1H152A219	C CHIP 50V 1500PF	
C5083	F1H1C104A041	C CHIP 16V 0.1UF	
C5084	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5085	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5087	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5089	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5091	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C6034	ECJ1VF1E104Z	C CHIP 25V 0.1UF	
C6037	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6038	ECJ1VC1H180J	C CHIP 50V 18PF	
C6039	ECJ1VC1H220J	C CHIP 50V 22PF	
C6044	ECJ1VC1H101J	C CHIP 50V 100PF	
C6045	ECJ1VC1H820J	C CHIP 50V 82PF	
C6047	ECJ1VC1H471J	C CHIP 50V 470PF	
C6048	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C6049	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6053	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6054	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6055	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6056	ECJ1VB1H561K	C CHIP 50V 560PF	
C6078	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6082	F1H1C104A041	C CHIP 16V 0.1UF	
C6086	ECJ1VC1H330J	C CHIP 50V 33PF	
C6092	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C6094	ECJ1VB1H681K	C CHIP 50V 680PF	
C6096	ECEA0JKN220B	ELECTROLYTIC 6.3V 22UF	
C6097	ECJ1VB1H392K	C CHIP 50V 3900PF	
C6098	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6101	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6108	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6110	F1H1C104A008	C CHIP 16V 0.1UF	
C6111	F1H1C104A008	C CHIP 16V 0.1UF	
C6147	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6154	ECJ1VB1H333K	C CHIP 50V 0.033UF	
C6156	ECJ1VF1A105Z	C CHIP 10V 1UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C6201	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C6202	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6203	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6204	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6205	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6206	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6207	F2A1E2210040	ELECTROLYTIC 25V 220UF	
C6208	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C6209	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C6210	F1H1E223A029	C CHIP 25V 0.022UF	
C6211	F1H1E223A029	C CHIP 25V 0.022UF	
C6212	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C6213	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6215	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6216	ECJ1VF1A105Z	C CHIP 10V 1UF	
C6217	ECJ1VB1H182K	C CHIP 50V 0.0018UF	
C6219	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6221	ECA1EM101I	ELECTROLYTIC 25V 100UF	
C6222	F1H1C104A041	C CHIP 16V 0.1UF	
C6223	F1H1C104A041	C CHIP 16V 0.1UF	
C6224	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6225	F1H1C104A041	C CHIP 16V 0.1UF	
C6227	ECJ1VF1A105Z	C CHIP 10V 1UF	
C6301	F2A0J331A283	ELECTROLYTIC 6.3V 330UF	
C6302	ECJ1VF1E104Z	C CHIP 25V 0.1UF	
C6306	ECJ1VC1H470J	C CHIP 50V 47PF	
C6307	ECJ1VC1H470J	C CHIP 50V 47PF	
C6406	ECJ1VC1H101J	C CHIP 50V 100PF	
C6407	ECJ1VC1H101J	C CHIP 50V 100PF	
C6408	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6501	F1H1C104A008	C CHIP 16V 0.1UF	
C6505	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6506	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C7006	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C7009	F1H1H102A219	C CHIP 50V 0.001UF	
C7011	ECJ1VC1H270J	C CHIP 50V 27PF	
C7012	ECJ1VC1H270J	C CHIP 50V 27PF	
C7017	ECJ1VB1H102K	C CHIP 50V 1000PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	G0B183E00002	LINE FILTER 0.5A 18MH	⚠
L1008	J1ZZA0000001	RESONANT SNUBBER	
L1010	G0A220GA0026	COIL 22UH	
L1011	G0A100HA0023	COIL 10UH	
L3012	G0C271JA0019	COIL 270UH	
L3059	G1C120JA0036	COIL 12UH	
L3301	G0C150KA0045	COIL 15UH	
L3302	G0C680KA0045	COIL 68UH	
L3303	G0C330KA0045	COIL 33UH	
L3304	G0C680KA0045	COIL 68UH	
L4095	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4096	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4101	G0C221JA0021	COIL 220UH	
L4121	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L4122	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L4123	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L4134	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L4135	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L4201	G0C101KA0030	COIL 100UH	
L5084	G0C560KA0045	COIL 56UH	
L5085	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L5086	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L5087	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L5089	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L5090	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L5091	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L6002	G0C4R7JA0019	CHIP BEAD INDUCTOR	
L6006	G0C101KA0045	COIL 100UH	
L6301	G0C470KA0030	COIL 47UH	
L7002	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L7016	G0C101KA0045	COIL 100UH	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3001	H0D357400068	CRYSTAL OSCILLATOR	
X6001	H0D120500017	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	VEE0X50	GROUNDING WIRE	
P4001	K1MZ02A00003	FE CONNECTOR 2P	
P4002	K1MN06A00030	CONNECTOR 6P	
P5002	K1MN09A00029	CONNECTOR 9P	
P6201	K1KA08A00290	CONNECTOR 8P	
P6202	K1KA02A00229	CONNECTOR 2P	
P6203	K1MN07A00017	CONNECTOR 7P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	K0ZZ00000598	SWITCH	
SW6002	K0C111A00006	SWITCH	
SW6312	EVQ11A09K	SWITCH PUSH	
SW6317	EVQ11A09K	SWITCH PUSH	
SW6318	EVQ11A09K	SWITCH PUSH	
SW6322	EVQ11A09K	SWITCH PUSH	
SW6323	EVQ11A09K	SWITCH PUSH	
SW6325	EVQ11A09K	SWITCH PUSH	
SW6326	EVQ11A09K	SWITCH PUSH	
SW6327	EVQ11A09K	SWITCH PUSH	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	K5D162AQ0004	FUSE 125V 1.6A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	LSTP0126	TRANSFORMER	⚠
T4101	G2A472C00003	TRANSFORMER	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	K2HA612B0045	AUDIO/VIDEO JACK SOCKET	
JK3002	K2HA306B0058	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
711	PNA4618M01KT	INFRARED RECEIVER UNIT	
712	VMD4258	PHOTO SENSOR HOLDER	
716	B3CJZ0000013	LED DISPLAY PANEL	
741	LSJA0360	AC CORD W/PLUG,AC 120V	⚠
743	J3AAADB00004	TUNER UHF/VHF NR	
771	EYF52BCY	FUSE HOLDER	